THE ECONOMICS OF LANDSCAPES:

WHY INVEST IN LANDSCAPE ARCHITECTURE IN MIXED-USE DEVELOPMENTS/CENTERS IN TEXAS

by

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Abstract

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The purpose of this research is to understand the extent to which developers perceive landscape architecture to be a valuable component of mixed-use developments/centers in Texas and how such perceptions add value to their investment strategies. The research focuses on the mixed-use center landscape typology, a growth sector in Texas regional real estate development (VNT, 2014).

Since 2000, approximately an 80% Texas population growth occurred in the four major metropolitan areas, Dallas, Houston, Austin and San Antonio (Slijk,.& Saving, 2018) and global trends illustrate that by the year 2050 70% of world population will live in cities (United Nations, 2018). As urban areas continue to grow and population increases, mixed-use centers, have become the preferred model for development in Texas to accommodate density. The urban growth

environment calls for a deeper understanding of the value equation between the divergent goals of landscape architecture and real estate investors. In particular, a comparison of how landscape architects discern value of a particular site or design proposal often yields a disconnect in the qualitative self-assessments of landscape architects versus the quantitative assessment or design feasibility studies of developers (Guironnet & Halbert, 2014; Jerke et al, 2008). Literature also illustrates that the valuation of landscape architecture in mixed-use developments is somewhat limited to rental premiums achieved through proximity to green space and connected pathways (Stewart, 2014; Laverne & Winson – Geideman, 2003; Miller, 2001). Collectively, literature review suggests a need for qualitative research on the perception of value of landscape architecture in mixed-use centers in Texas can be achieved.

This research follows qualitative research methods to assess developer perceptions of the value of landscape architecture (Deming & Swaffield, 2011), in mixed-use developments/centers in Texas. The research utilizes in-depth interviews with major developers and passive observations to provide reference data of representative developer sites. The data were analyzed by drawing common themes using grounded theory (Glaser and Strauss, 1967) to assess trends and developer perceptions of the value of landscape architecture in mixed-use developments/centers in Texas.

In summary, the research findings provide landscape architecture professionals with insight into the investment drivers of mixed-use development/center developers in Texas. This research illustrates that divergent goals of real estate investors and landscape architecture can be bridged to

achieve greater value to society when perceptions of value are understood. In particular, how landscape architects discern value of a particular site or design proposal based on its ability to meet user needs, “use value” is different from “exchange value,” a metric utilized by the investment community (Logan et al, 1987). Mixed-use developers place precedence on the concept of exchange value, a transactional or financial value, but employ investment strategies that encompass differing investment time horizons. The concept of investment horizon is important because developer perceptions of landscape architecture reflect whether developers invest in short term commodity-like developments, long term legacy-like or a combination of the two. In turn, developers maintain perceptions of landscape architecture as commodity-like, legacy-like or a combination of the two, as product. By understanding the difference between the seemingly divergent goals of the design and investment communities over the time continuum of the landscape of mixed-use developments/centers, landscape architects are positioned to “bridge the business with the city” by creating connectivity and ultimately a sense of place to users and visitors. A landscape architects ability to understand investment drivers and constraints of mixed-use developers elevates landscape architecture’s position as an advocate of design that addresses both “use” and “exchange” related goals of stakeholders, developers, governments and users. In conclusion, the study reinforces the concept that when it comes to mixed-use development, landscape architects have a critical position “at the table” as they become mediators for the public good through landscape design.

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Chapter 1

Introduction

1.1 Background

Since Roman times, “rus in urbe”, country in the city, has been associated with the concept of parks as a means of promoting health and wellbeing of citizenry. Campus Martius was considered a place of gathering in Ancient Rome and, over time, transformed into a predecessor of today’s mixed-use development. Campus Martius’ numerous theaters, sports complexes, temples and residences in close proximity to the Tiber River plain, gave rise to a vibrant “live-work-play” district which is still evident today Wood, 2004). Roman drivers for preservation and complementary development in and around Campus Martius were quality of life driven, which is different from the drivers for mixed-use development today, as emperors have been replaced by individual and investor groups with economic drivers.

Those who create urban space within and near cities impact investment for public benefit or misfortune. This study serves to outline the drivers behind developer investment in mixed-use developments in Texas and to understand how landscape architecture as a profession affects such drivers. To achieve this goal mixed-use developers were interviewed to understand their perceptions of the value of landscape architecture.

Since the 1980’s, real estate investors in the United States drove city growth and form. Financial resources of private investors were thought to complement city initiatives to expand city footprints and provide citizens with

amenable surroundings and quality of life. Enora Robin & Francis Brill note that urban form created by real estate investment initiatives can be considered a tangible expression of the investment drivers or exchange values of real estate developers (Robin & Brill, 2018). In particular, exchange value is inclusive of developer return on investment (ROI) and/or profitability and often times fails to meet local needs or cities' objectives to improve the quality of life of its citizenry. An exchange value encompasses a transactional sale or short-term perspective. The discipline of landscape architecture "..bring(s) different and often competing interests together so as to give artistic physical form and integrated function to the ideals of equity, sustainability, resiliency and democracy" (LAF, 2016, 1). In particular, landscape architects place precedence on "use" value or quality of life approach to built space that is meant to withstand the test of time versus profitability cycles or investors.

Investor-developer-government cooperation thrusts investor values into the public realm and thus, increases developer roles as catalysts of "spatial development" (Hess, 2014). Unlike the theory of "rus in urb," contemporary real estate investments are thought to reflect risk, return, and liquidity in elements of the urban fabric (Wood, 2004; Guirronnet et al, 2016). Urban planners and landscape architects play a critical role in mediating the fiscally focused drivers of urban development initiatives such as mixed-use development.

The scope of landscape architecture research is rooted in the social contexts of urban design and landscape architecture with an emphasis on health, safety, and welfare (Ozdil, 2008; Chou et al, 2016). Landscape architecture is uniquely positioned to design elements and programming that affect both the

economic value drivers of the development community while at the same time holding true to the mission of landscape architecture “to serve the health and wellbeing of all communities (Landscape Architecture Foundation, 2017, pg.1)”. How such contexts are understood and exchanged creates a schism in the perception of value – “use value” versus “exchange value” (Logan et al, 1987). Real estate investment is considered a commoditization of land and buildings or “exchange value” as properties are sold or rented for profit, while “use value” extends beyond monetary worth or material use to include a psychological value that cannot easily be quantified (Logan et al, 1987). The concept of human experiences is an element of value that is not readily reflected in transactional or fiscal assessments of value. Literature provides insight into the differing perceptions of value as it relates to landscape architecture and outlines drivers within the development community that determine project feasibility and thus, the extent to which landscape architecture impacts the built environment at the onset of development.

In summary, Chapter 1 inquires above mixed-use development investment as a research typology, the role of landscape architecture as a mediator of mixed-use real estate valuation, and supports further exploration of how landscape architecture is valued by mixed-use developers. The chapter outlines the problem statement and purpose of research, presents key research questions, defines key terms and research methods, and presents the limitations and assumptions associated with this research. The research explores the concept of value, value drivers of real estate investors, or developers in Texas

and the role of landscape architecture in contributing to the value of mixed-used developments as understood by developers.

1.2 Problem Statement

> "Historically, landscape architecture maintained integral and dynamic relationships to a variety of pursuits, from painting to sewerage. These relationships were not static or one-way streets; rather they included an exchange of information that allowed the fields to dynamically play off each other, to evolve and expand...The relationship of landscape architecture to its allied professions is today parasitic rather than mutualistic" (Hohmann, & Langhorst, 2004, pg. 2).

Landscape Architecture is an established component of mixed-use investment. Landscape elements impact a site beyond green space to include "…topography, drainage, climate and sustainability issues related to soil, water and habitats, in the context of human uses (Rotenberg, 2012, pg. 233)". Rotenberg notes that aesthetic elements such as plant materials and features that support human uses are also within the scope of landscape architecture (Rotenberg, 2012). The extent to which investors place value on the contributions of landscape architecture and urban design to the overall value of mixed-use developments in Texas is marginally explored in literature relating to monetary or exchange value, such as rents, tax revenue generation and property value appreciate, however, in the context of mixed-use developments, developer perceptions of landscape architecture is not readily understood. Landscape architecture's understanding of the goals and motivations of mixed-use

developers creates an opportunity for a symbiotic relationship that affects urban design outcomes and, in particular, user satisfaction (Roberts et al, 2012; Surová, & Pinto-Correia, 2016). Mixed-used developments are created and used by a large number of stakeholders including but not limited to landscape architects, architects, investors, developers, planners, city officials, residents, workers, visitors, etc. The desired outcome of value of mixed-use developments can have many meanings depending on ones role in affecting and/or using the amenities afforded in the development (Surová, & Pinto-Correia, 2016; Miller, 2001).

Landscape architecture as a stakeholder in design is positioned to impact all users. Extracting value drivers from the Texas mixed-use development community informs future design and collaboration amongst developers and landscape architects. Understanding economic drivers of mixed-use developers and the role of landscape architecture in affecting those drivers better positions landscape architects to advocate and "…serve the higher purpose, though design, of social and ecological justice for all peoples and all species" as noted in the Landscape Declaration (LAF, 2016, pg. 1).

1.3 Purpose of Research

The purpose of this research is to understand the extent to which developers perceive landscape architecture to be a valuable component of mixed-use developments/centers in Texas and how such perceptions add value to their investment strategies. The research focuses on the mixed-use center landscape typology, a growth sector in Texas regional real estate development

(VNT, 2014). The research informs landscape architects of how clients, developers, value their services and to provide insight into how landscape architecture can better service their mixed-use development center clients in the future while at the same time affect the principles of landscape architecture as articulated through the LAF's Landscape Declaration (LAF, 2016).

How investors, governments and users define value is multi-dimensional. The role of the landscape architect is to design within the financial framework of investor requirements while at the same time ensuring the health, safety, and welfare of landscape users. Objectives of the respective stakeholders, is sometimes divergent, however, understanding the drivers of each stakeholder provides insight into how landscape architecture can use design to mediate such seemingly disparate elements of development, such as open/activated green space versus the establishment of a revenue generating structure. Planners or local governments are often seen as the ultimate ombudsman in ensuring developer investments are affected within a given geographic area and achieve local and regional objectives of improving quality of life for its citizenry. Government's growing dependence on property and sales tax revenues incentivizes development from a fiscal point of view versus a social one (Castro, & Lavine, 2013). The dawn of investment and/or income incentives by municipalities, developers and developer equity sources (i.e. banks, private equity funds and private investors), however, may undermine the common good by creating a developer driven approach to design versus a regionally focused, user centric, participatory process-informed one (Robin, 2018). As developers gain more power over urban design, landscape architects are uniquely positioned

to mediate the financial goals of investors and governments between the quality of life goals of landscape users, the citizenry.

In conclusion, landscape architecture should be a material component of mixed-use development in Texas. This thesis outlines how landscape architects bridges the concepts of exchange value and use value. As design service providers to developers, landscape architects are in an operative position to support developer profitability, and local and regional growth initiatives in tandem with affecting designs that improve the health, safety, and wellbeing of the community and its adjacencies. Understanding developer perceptions position landscape architecture to anticipate client investment drivers and, where possible, provide designs that readily support social-ecology goals of the discipline of landscape architecture articulated in the Landscape Declaration (LAF, 2016).

1.4 Research Questions

The research questions investigated within mixed-use development and centers in Texas are;

1) Why invest in landscape architecture in mixed-use developments/centers in Texas?
2) What role does landscape architecture play in creating mixed-use developments/centers according to developers?
3) What aspects of landscape architecture are utilized most among developers?

The three questions above provide a basis for understanding value and give insight into the value of landscape architecture in mixed-use developments/centers. The following represent exploratory questions or research to help to define concepts leading up to the questions above, and to inform appropriate research design and research methods.

- In what ways does the perception of value differ between landscape architects and real estate developers?
- What is a mixed-use development and mixed-use center?
- What elements of landscape architecture exist in mixed-use developments?

1.5 Definition of Key Terms

"Broker" – a company or individuals who facilitates the sale and purchase or transactional exchange of real estate. Brokers also provide consultation and rental services to developers.(Geltner et al, 2001).

"Developer" – an individual or corporate investor who purchases, develops and activates commercial real estate to achieve a financial benefit.

"Exchange Value" –Exchange value is a transactional or financial value of real estate calculated by selling property or the current value of future rental receipts to achieve a monetary value (Logan et al, 1987).

"Hedonic pricing" - a pricing model that recognizes that many variables play into the value or price of property. Properties are considered a bundle of attributes including structure, location, environment, and economic characteristics impact value or price (Celia Bilbao, Luis Valdés, 2016).

"Horizontal Mixed-Use" – an urban form that combines both single-use buildings and multi-use buildings with multiple uses within one block. Horizonal mixed-use developments utilize place making and open space to create connectivity within the development (Blackson, 2013).

"Mixed-Use Development" – developments with three (3) or more "significant revenue generating uses" that are physically and functionally integrated on use intensive land with un-fragmented pedestrian connections and are part of a master plan that outlines use types, "scale permitted densities and related items". (VNT, 2009; Schwanke, 2003, Witherspoon & Abbett, 1976;Regional Choices for North Texas, 2008; Ozdil et al 2008).

"Mixed-use Centers" – mixed-use developments that are comprised of town centers, urban villages and/or districts (Schwanke, 2003) .

"Developer" – is an investor or agent of an investor (individual or institutional whose primary business is in the transformation of property into usable space;

"Financial feasibility" - the threshold when an investor or developers return on investment (ROI) meets or exceeds expectations or the required return; (Rabianski et al, 2009).

"Real Estate Development" – the business practice or the place created by the business practice of purchasing, preparing land, developing or building structures, and activating such structures for use. The purpose of real estate development, from a developer's perspective, is to create cash flow or a profit through the sale or rental of development structures and/or land.

"Return on Investment" (ROI) – the ROI is the return per dollar invested and is typically calculated as a ratio by dividing the net profit by the total assets (Merriam-Webster, 2018)

"Use Value" – the value of a particular site or design proposal based on its ability to meet user need (Logan et al, 1987).

"Value" - the regard that something is held to deserve; the importance, worth, or usefulness of something, a equitable return or goods, services, or money for something exchanged relative worth or utility (Merriam-Webster, 2018).

"Vertical Mixed-Use"– a development where different uses such as retail, dining, office and living space are within the same building. Street level floors have more public uses while upper floors accommodate more private uses such as living and/or office space. In some urban contexts an entire block may be composed of a vertical mixed-use building (Blackson, 2013).

1.6 Research Methods

The research uses qualitative research methods to assess the value of landscape architecture in mixed-use developments and centers in Texas (Deming & Swaffield, 2011). The research specifically focuses on to assessment of developer perceptions of the value of landscape architecture. The research design is comprised of three primary components; first, literature review explores and defines mixed-use and value drivers of both developers and landscape architects as it relates to mix-use developments/centers. Second, primary data are obtained through person-to-person interviews with developers of mixed-use

developments/centers in Texas. The information gathered informs what value mixed-use development center developers place on the discipline of landscape architecture. Research also benefits from passive observations to provide referential view concerning such developments. Third, the data are analyzed by drawing common themes using grounded theory (Allen & Davey, 2018, Charmaz, 2005; Glaser & Strauss, 1967, O'Reilly & Marx, 2012) to assess trends and developer perceptions of the value of landscape architecture in mixed-use developments/centers in Texas.

1.7 Limits, Limitations, Significance

This section features the limits, limitations, and significance of the study. Limits include but are not limited to the existing defined scope of the research prior to study commencement and that knowledge gained (or not gained) during the research process. The scope of the project extends to mixed-use developments and centers in Texas. Developers interviewed for the purpose of this research affect mixed-use developments within Texas but may have mixed-use development projects in other markets that influence interview responses.

This research represents a qualitative research endeavor. The availability or accessibility of worthwhile data in most cases relies on qualitative information, which can be a limit in design research. In particular, data sources, experiences of interviewees, and data collection time frame are limiting factors in communicating all data within the scope of this research. In addition, secondary data may contain assumptions or errors that are not readily identified by the researcher.

The significance of this research is how landscape architecture understands the perspectives of its clients in the creation of mixed-use developments in Texas. Integration of new developments into the urban fabric is impacted by landscape architectural designs. Client, or developer, incentives sometimes impact the ability of landscape architecture to achieve a design solution that optimizes urban infill integration into the existing city fabric. The growing number of mixed-use developments affected in Texas provides opportunities for landscape architecture to design urban integration, while at the same time, facilitate the economic benefits desired by the mixed-use developer community, their tenants and the city as a whole. Research in this regard is significant to assess and address the divergent goals of both mixed-use developers and landscape architects and identify the opportunity to bridge those goals.

1.8 Assumptions

This research assumes that literature data is supportive of current market valuation philosophies. Additionally, the data collection procedure encompasses participating developer insight into Texas mixed-use experience.

The research assumes that landscape architecture consistently engages in the design of mixed-use centers in Texas. The scope of landscape architecture design services for mixed-use centers varies. The scope of landscape architecture design is informed by project budgets, spatial availability, expected uses, etc. but ultimately maintains a goal consistent with the discipline

of landscape architecture as a whole, of improving or affecting the health, safety, and wellbeing of mixed-use development users.

The research assumes that interviews with developers of mixed-use development centers in Texas respond to interview questions as it relates to Texas developments. References to out of scope mixed-use center/developments, those outside of Texas, or sentiments derived from out of scope developments are stricken if expressly identified by the interviewee or are assumed to be consistent with experiences with Texas developer experiences in mixed-use developments/centers.

1.9 Chapter 1 Summary

This research seeks to understand if developers perceive landscape architecture to be a valuable component of mixed-use developments/centers in Texas and how such perceptions add value to their investment strategies. Specifically, the research focuses on the mixed-use center landscape typology, a growth sector in Texas regional real estate development. The study attempts to understand the gap between the divergent goals of real estate investors and landscape architecture when it comes to mixed-use centers in Texas in order to achieve greater understanding of the value of landscape architecture perceived by mixed-use developers and how such value can be enriched to include a greater level of use value to the community.

This thesis has been arranged into the following chapters, (1) Introduction, (2) Literature Review, (3) Research Methodology, (4) Analysis and Findings and (5) Conclusion. Chapter 1 defines the research problem and

purpose of research as well as procedures and merit of the study. Chapter 2's literature review provides an extensive exploration of mixed-use typologies, why mixed-use centers are targeted in this study and trends in mixed-use center developments in Texas. The chapter also explores literature on the value of landscape architecture to three stakeholders, landscape architects, developers and governments or public agents as it is referred to in this study. Chapter 3 outlines the use of constructivist grounded theory for the purpose of exploring perceptions of developers through in-depth interviews. Chapter 4 articulates the results of in-depth interviews with mixed-use center developers in Texas. Chapter 5 provides a synthesis and conclusion of the research, which includes the relevance of landscape architecture to mixed-use developers in Texas and opportunities for future research.

Chapter 2

Literature Review

2.1 Introduction

This literature review chapter encompasses three primary areas. First, the chapter identifies mixed-use development centers as an important area of study. In particular, mixed-use typologies are defined and refined to determine the scope of the research and the state of mixed-use development centers in Texas is discussed

Second, the chapter identifies complementary and differing considerations of value between the developer and landscape architecture communities, respectively. Often assumed to be conflicting, it is these independent considerations of value, which drive contemporary design (O'Hare, 1997).

Finally, literature review within this chapter affirms that "popular taste and capital markets are here to stay" and landscape architecture is uniquely positioned to mediate the goals of developers and the quality of life of landscape users through design (O'Hare, 1997, pg. 91). By considering value through the lens of developers, landscape architecture can mediate successful design of mixed-use developments/centers.

2.2 Mixed-use Developments/Centers

The characterization of mixed-use developments evolved over time, however, its basic definition, established in 1976, remains the same (Schwanke

et al, 2003). According to Schwanke, mixed-use developments are characterized by three primary characteristics, (1) three or more significant revenue-generating uses (such as retail, entertainment, office, residential, hotel, or civic/cultural/recreation) that are complementary or symbiotically support each other; (2) project elements are physically and functionally integrated and (3) overall project conforms to an intelligible plan. Urban form is a collective of many land uses inclusive of differing land cover categories such as mixed-use developments (Kaza, 2012). In particular, urban mixed-use falls under the United States Geological Survey (USGS), land-use/cover classification of "mixed-urban built up" (Anderson et al, 1976) and are comprised of four differing typologies.

Mixed-use typologies are evident in four distinct forms (Ozdil, 2008). Building/tower developments are architecturally vertical developments inclusive of mixed-use characteristics identified by Schwanke et al. Multi-building/tower developments are a collective (more than one) architecturally vertical development inclusive of mixed-use characteristics as identified by Schwanke et al. While mixed-use centers are town centers, urban villages or districts, horizontally sited and inclusive of mixed-use characteristics identified by Schwanke et al. Similar to new mixed-use centers, traditional centers – main streets, downtowns, neighborhood districts and central business districts include mixed-use characteristics (Schwanke et al.,2003; Ozdil, 2008). Figure 2.1 denotes *Vision North Texas 2050* Criteria for Mixed-use Centers based on center location in. Depending on location, form of mixed-use center varies.

Typologies Districts	Mix of Uses	Employment Intensity	Residential Density	Scale	Height	Transit System Function
Regional Center	Office, retail, MF residential, light industrial and entertainment; includes mixed-use. Emphasis on employment uses.	100 - 200 jobs/acre	50 - 100 units/acre	600 - 1,000 acres	5 to 50 stories	All modes of transportation; regional public transit, parking restrictions, and served by multiple major highways.
Metropolitan Center	Office, retail, MF residential and entertainment; includes mixed-use.	50 - 80 jobs/acre	15 - 50 units/acre	100 - 500 acres	2 to10 stories	Served by one or more corridor/ regional lines and local services. Freeways with multiple access points. In some cases served by public transit.
Community Center	SF and MF residential and retail; includes mixed-use.	30 - 50 jobs/acre	5 - 10 units/acre	20 - 100 acres	1 to 5 stories	Served by at least several local transit and located on an arterial network. Served by a transit route providing connections to at least one Metropolitan Center. Commuter parking in located in this center. In some cases served by public transit.
Neighborhood Center	Mix of uses at a neighborhood scale.	20 - 30 jobs/acre	10 - 15 units/acre	20 - 100 acres	1 to 5 stories	Served by local roads and local transit to nearest larger center. Commuter parking in located in this center. In some cases served by public transit.
Note: Transit-Oriented Development (TOD) projects may occur within any of these centers.						

Figure 2.1 Criteria for Mixed-use Center Vision North Texas 2050 (VNT, 2009)

Mixed-use developments are considered environments where users can live, work and play. In particular, mixed-use centers often include both employment opportunities, residential structures, and food and entertainment venues and vendors. The residential component of mixed-use developments/centers is a growing trend in mixed-use development in Texas. Emphasis on urban density growth results in two distinct mixed-use forms, vertical mixed-use and horizontal mixed-use. Vertical mixed-use is where residences, work and entertainment opportunities are structured vertically (Blackson, 2013).. The vertical form is more prevalent in densely populated urban areas. Horizontal mixed-use, however, arranges the uses horizontally. Townhomes, walk-up apartments, and densely platted single-family homes are situated within close proximity to business, retailers, restaurants, etc. Town centers are a form of horizontal mixed-use.

They come in variety of forms, shapes and names such as: Mixed-Use Developments, Mixed-Use Centers, Adaptive-Reuse - a typology of urban redevelopment, New or Old Town Centers/Squares – mixed-use that harkens back to the origin of mixed-use in the US (shop on the bottom and living upstairs), Transit-Oriented Developments utilize transit hubs as an urban collector and convocation area, Urban Villages are neighborhood like urban mixed-use that are strongly linked to place making, Community Centers are formed of mixed use that provide a central meeting spot and activity center for residents in addition to Lifestyle Centers, Neighborhood Centers, Historic Districts, Entertainment Districts to name a few (Ozdil et al, 2008).

2.3 Mixed-use Developments as a Study Reference Typology

For the purpose of this research, emphasis is placed on mixed-use center developments in Texas and the perceptions of those who invest in mixed-use typologies. Selection of this typology reflects both statewide and domestic trends in real estate development. Deloitte Center for Financial Services recently released its 2019 Commercial Real Estate Outlook Report (Kerjiwal, & Mahajan, 2018, pg. 4). The report was global in nature, but as noted in Figure 2.1, outlined increased mixed-use investment trends within the United States.

The report also revealed 4 key themes of driving investment by commercial real estate investors;

1. Investors will plan on increasing their investment in Commercial Real Estate (“CRE”);

2. Nontraditional assets such as mixed-use developments and real estate with flexible leases or spaces will receive an increased investment allocation;
3. Investors will prioritize investments in existing assets and new investments positioned to respond to future technologies and business models;
4. Investors see a significant impact from advances in technology on legacy investments.

Figure 2.2 2018 Global Investment Trends in Commercial Real Estate
Source: (Kerjiwal & Mahajan, 2018)

2.3.1 Mixed-use Trends in Texas

Since 2000, approximately an 80% Texas population growth occurred in the four major metropolitan areas, Dallas, Houston, Austin and San Antonio

(Slijk,.& Saving, 2018). Growth rates in Texas modify the urban form as new residents, both domestic and international move to Texas for work. Employment growth for 2018 is expected to be 3.4% while housing sales are at all time highs in the four major metropolitan areas yet inventories remain at all time lows. As noted in Figure 2.2, with the exception of San Antonio, job growth rates further support increases in urban density trends (Slijk, & Saving, 2018).

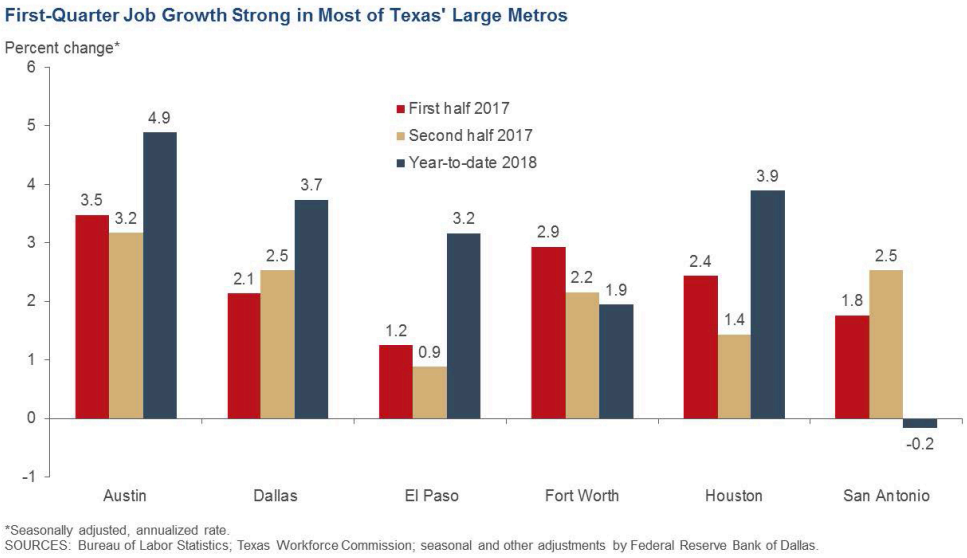


Figure 2.3 First Quarter Job Growth vs. Historical Levels in Texas
Source: Bureau of labor statistics, Texas Websource Commission, Federal Reserve Bank of Texas

Deloitte and Vision North Texas's assessment of mixed-use investment trends were further supported by a 2013 study conducted by Transit Center and Resource Systems, Inc. (Bragdon et al, 2014). The study focused on transportation modes, however, it also offered insight on neighborhood preferences. In particular, the younger cohort preferred urban or suburban neighborhood types to small town/rural types. Additionally, 34-year-old plus

respondents preferred suburban or small town/rural neighborhoods. The Transportation Center study asked participants to identify their ideal neighborhood type versus their current neighborhood type. The research indicates that collectively the group idealized mixed-use neighborhood typologies to that of existing constructs. See Figure 2.3 and 2.4. Although U.S. Census trends show a movement of all age groups from urban areas to suburban areas, investment in mixed-use centers in fringe or suburban communities is on the rise in Texas. Thus, mixed-use is not limited to urban infill.

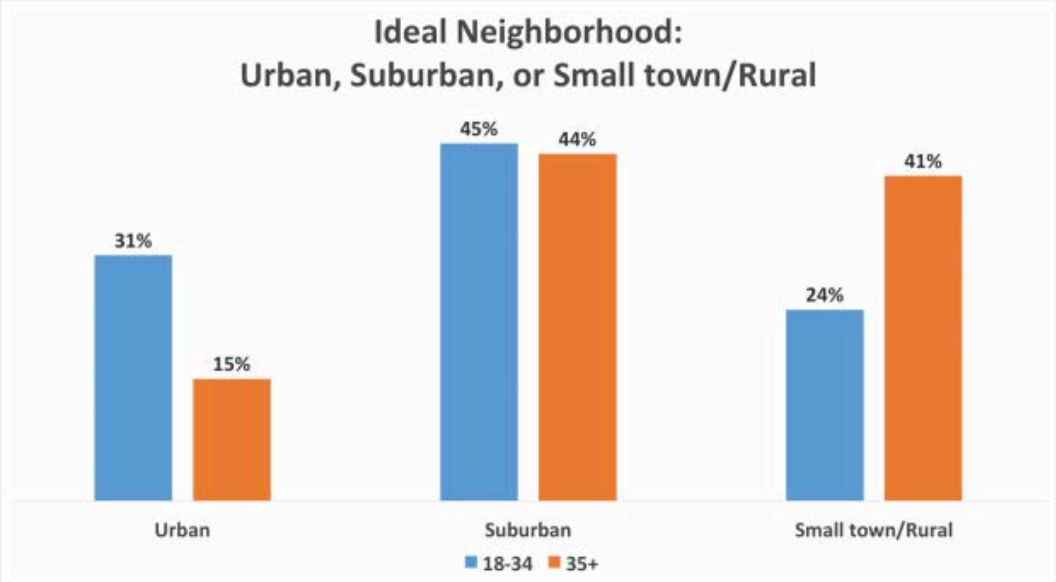


Figure 2.4 Ideal Neighborhood Characteristics by Age
(SOURCE: Bragdon, D. , 2013; Cummins, B., 2016).

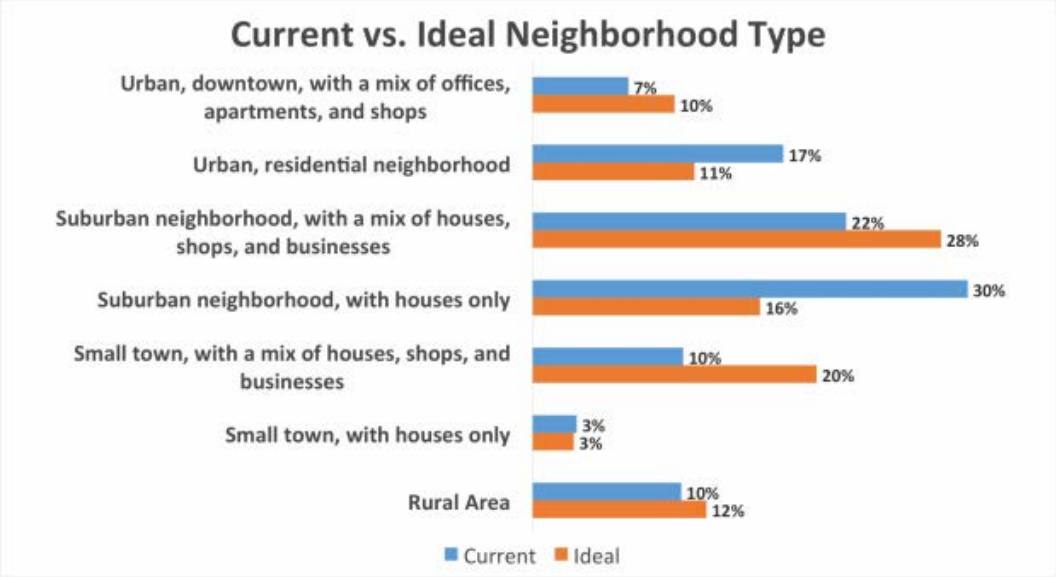


Figure 2.5 Current vs. Ideal Neighborhood Types
(SOURCE: Bragdon et al, 2013; Cummins, B., 2016).

Vision North Texas findings indicate an increase in mixed-use development typologies within the region, however, mixed-use locations will include not only urban infill but exurban developments that make up an urban-suburban arrangement (ICSC, 2017). It is within these urban-suburban arrangements that citizenry connects with each other both socially and commercially.

A 2009 study in North Texas identified 214 mixed-use developments and centers with only 39 within ½ mile of a traffic survey zone representing suburban or areas with less density (VNT, 2009). This fragmented pattern of mixed-use development continues to trends in Austin, Houston and San Antonio, however, Austin is seeing an increase in vertical versus lateral mixed-use typologies as a result of a 2006 Vertical Mixed-use zoning ordinance (Freer, 2018). The mirrored

development patterns and investment trends of both statewide (Slijk, & Saving, 2018) and global real estate investments qualifies mixed-use developments and developers as a valuable source of insight for landscape architecture. Although the research scope is limited to Texas, one can infer that the “Texas experience” is relevant to other markets of similar population and economic growth levels or trajectories.

2.4 Value of Landscape Architecture in Mixed-use Developments/Centers

The DNA of metropolitan areas can be found in sites where citizenry live, work and play. Often times, city codes dictate the form of spatial relationships that impact developers’ ability to coalesce activities with space. Ian McHarg (1992), posited that urban space should be designed with increased urban density to free up green and open space, utilization of green infrastructure to address storm water flows, create green linkages and support habitats, incorporation of public art and the engagement of citizenry to create sustainable urban environments (McHarg, 1992). Additionally, Ebenezer Howard’s desire to create a community that provides ready access to high wage jobs, social interaction and access to green space, to name a few, brings together the concepts of urban economics, urban design and the local governmental politics (Howard, 1902; Mentz & Goble, 2014, Wu, 2014).

Collectively, environment, economy and society give rise to urban density or urbanization as noted in Figure 2.5, yet still exist as an interdependent construct to affect human well-being (Wu, 2014; Ozdil, 2008). It is in mediating

environmental constraints, economic outcomes and social wellbeing that landscape architecture creates value.

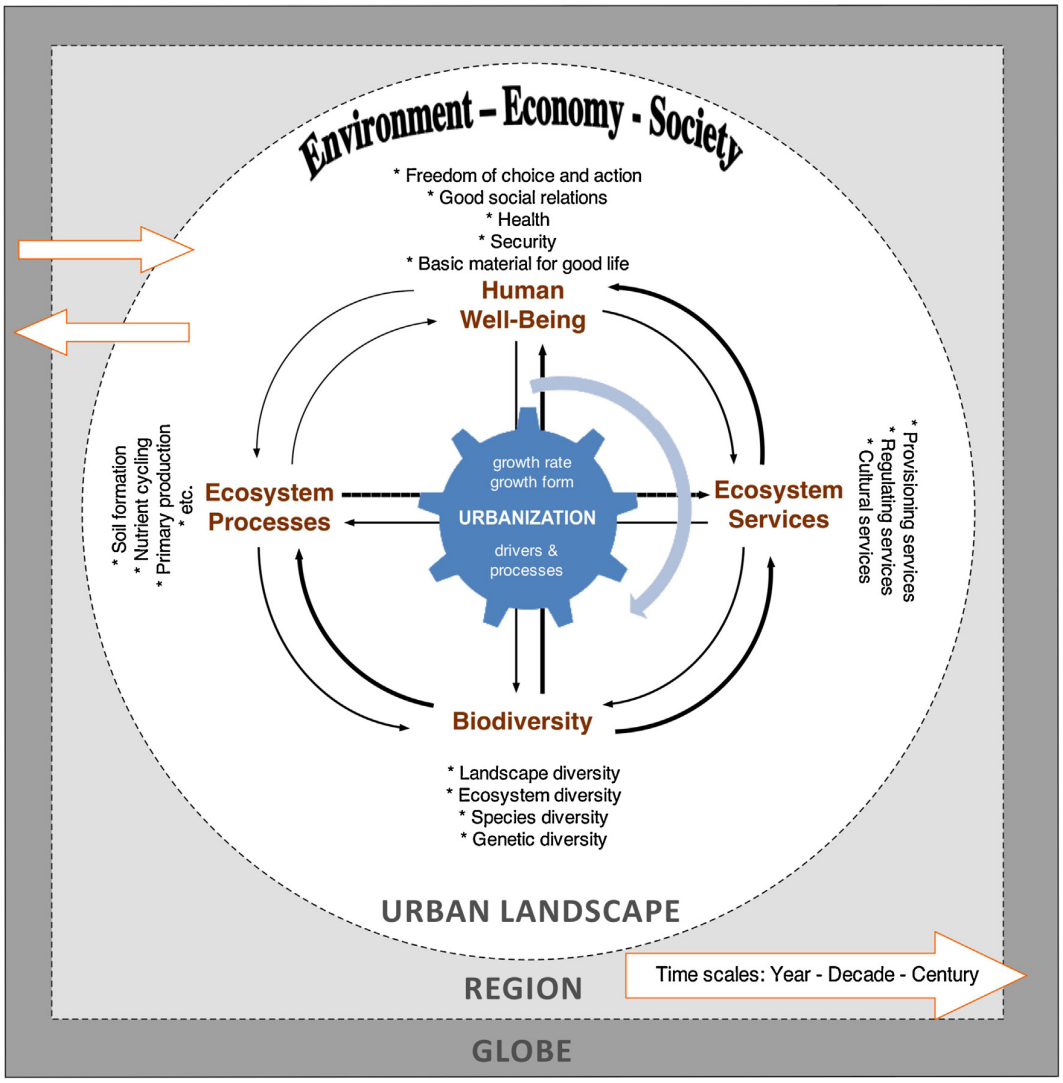


Figure 2.6 Relationships Among Biodiversity, Ecosystem Services and Human Well-being (Source: Wu, 2014, pg. 215).

Many drivers affect the perceived value of landscape architecture in mixed-use developments. Dennis Jerke developed the Quadruple Net Present Value Analysis to explore the economic, social/cultural, environmental and perceptual value of landscape architecture (Jerke et al, 2008; Segal, 2012).

Quadruple Net Value Analysis consists of the triple bottom line of sustainable development (economic, environmental, and social sustainability) with sensory value that measures the sight, sound, touch, taste and smell of a project (Booth et al, 2013). Jerke's modeling combines the quantitative elements of understanding post occupancy economic success with the intangible attributes that often impact total pricing or hedonic pricing of mixed-use centers/developments. Jerke and Wu both address the complexity of valuation as many factors contribute to the success of place from financial, social and environmental perspectives.

Economic centric strategies can often lack place-based concepts while urban plans can lack economic logic (Mentz, & Goble, 2014). Mixed-use centers/developments offer a revival of old town centers from the US and in Europe as an alternative to 1950's suburban landscapes, however, some purport that development trends are merely a reflection of the past (Ascher, 2015). Ascher's, *The Future of America's Cities Lies in the Past* reflects on urban form during pre-industrial times when craftsman and merchants often made and sold their wares within the same structures they inhabited (Ascher, 2015). Mixed-use represents a renewed desire to inhabit urban areas resulting in increased investment in aging infrastructure, new patterns of settlement – such as condominiums, housing with ground level retail, single family attached residences, etc. and an emphasis on urban parks and open spaces (Ables, 2014; Ascher, 2015). Ascher purports that a movement back to urban environs

represents a cities' recapture of human scale and an emergence of series of communities within a greater urban sphere.

Citizenry movement to more urban environs not only increases investment in infrastructure and parks but so too, affects investment in urban form as a whole (Ables, 2014). When drawing on existing infrastructure, further efficiencies are realized as infrastructure can be used to its fullest capacity (Ables, 2014; Mentz, & Gobel, 2014). Additionally, consideration of the inter-dependency of economic and place-based strategies creates opportunities for improved quality of life, employment and wealth creation for citizens, cities and developers, alike. Wu's depiction of the interrelationship of Environment, Economy and Society speaks to the interplay of human wellbeing, ecosystem processes, systems and biodiversity and the existence of economic drivers of space.

Detlev Ipsen's essay, *Space, Place And Perception: The Sociology Of Landscape*, explores the interdisciplinary nature of landscape. In particular, Ipsen notes that landscape is not only a material space but is a structure that is subject to evaluation through a culturally influenced lens. (Ipsen, 2012). Ipsen further portends that social scientists and landscape architects have differing but complementary roles in understanding and defining the interaction of society and nature (Ipsen, 2012).

Modernization is a major factor in redefining the relationship between society and nature (Ipsen, 2012; Elias, N. 1995). Modernization is also a driver in the increased levels of mixed-use investments (Kejriwal, & Mahanian, 2018). Modernization allows society to harness control over nature to suit its own

purposes (Marzluff, 2008). Such control, however, is not without societal impact. Human nature is to exert control to the extent that it meets human needs. At such a point where control results in a disadvantage for one group or another, a disengagement occurs in the concept of design for all as a platform for financial versus social performance overtakes the process of design. When conflicts occur, Landscape architects are particularly well positioned to either adversely or positively impact the environment or mitigate previous adverse impacts of space by bridging the incentives of users, developers and public agents.

Ipsen's essay says that "landscape is an access point to societal and physical space" and it is though this access point that a sense of place or, space, happens (Ipsen, 2012, pg. 74). The concept of access point implies a movement into and through space. According to Ipsen, a "space flow" is created and it is this flow that helps define the space and the impact of such space on the perception of nature. An example of this is when a highway is built along a coastline to achieve ready access to a destination. It is only after the highway is built that users appreciate the natural features of the coastline evident prior to the highway development. Texas Landscape architects, through the design of effective space flows can impact how space is used, perceived and valued over time. Lynch and Hack support this theory by identifying three elements of site design. The pattern of activity, pattern of circulation and the pattern of sensible form. (Lynch & Hack, 1984; Swaffield, 2002).

Texas is on an economic trajectory unlike other states within the US. Energy, manufacturing, and service sectors are outpacing historical levels and Texas's growth rate is outpacing that of other states in the US. In addition to

general economic indicators, age demographics plays a role in informing future urban design amenities and constructs. Texas is not only growing in job creation and housing starts, it is also a “young but aging” state where the state is experiencing a median age growth (Valencia, 2018). Such growth in an older demographic within urban settings further reinforces, C.W. Thompson’s observation about aging populations is that “the people who have the most need for access to public parks and the opportunity for sociability … are those who are least freely mobile” and for whom urban density benefits (Thompson, 2002, pg. 61).

Collectively, the economic indicators along with a desire for a robust return on investment are the fiscal drivers in the urban density levels identified by Kaza et al, 2018. Urban development decisions are made on fiscal grounds, whether on the part of governments or developers (Lang, 2007). Governments or public agencies benefit from tax income while developers benefit from increased rents or property values. Ultimately, who is assessing the feasibility of quality of life, or an improved, health safety and welfare of users when fiscal benefits are drivers of developer investments and government tax revenue generation lies in those who design the urban infill public and public-private spaces, landscape architects, urban planners and architects – disciplines of design. Landscape architecture is the critical thread that weaves the desired outcome of many users of landscape. Creating connected spaces with appropriate space flows will provide not only fiscal benefits to investors and government agencies but will also provide the socioeconomic benefits to daily landscape users (Lynch, and Hack, 1984; Carmona et al, 2001; Kaza, 2012; Stewart, D. 2014;).

2.4.1 Landscape Architecture Perspective: Value of Landscape Architecture

Landscape architecture's emphasis on the health, safety, and welfare of landscape users uniquely positions the discipline to impact user quality of life though design. Value creation is a necessary component of landscapes, as capital outlays by investors or governments must be justified. Landscape architects serve two purposes, to create environmental value through landscape and social value across the landscape (Ozdil, 2008; Stewart, 2014; LAF, 2014). Landscape architects, in the area of mixed-use development are cast members in Robin's play who can inform design while at the same time affect an economic value for real estate developers (Robin, 2018).

Mixed-use centers are a component of urban form. Urban planner and proponent of the "garden city" movement, Clarence Stein was noted as defining urban design "as the art of relating structures to one another, and to their natural setting to serve contemporary living" (Stein, 1955; Lang, 2007). Stein's perspective that relationships between structures, settings and those who inhabit such places, stems from Ebenezer Howard's Three Magnets illustration which outlined the benefits and challenges of urban, rural and urban-rural design. Howard identified the "town-country" construct as the ideal means to improve the quality of life for citizens as it provides ready access to green space, while at the same time environments for gathering and economic activity (Howard, E., 1902).

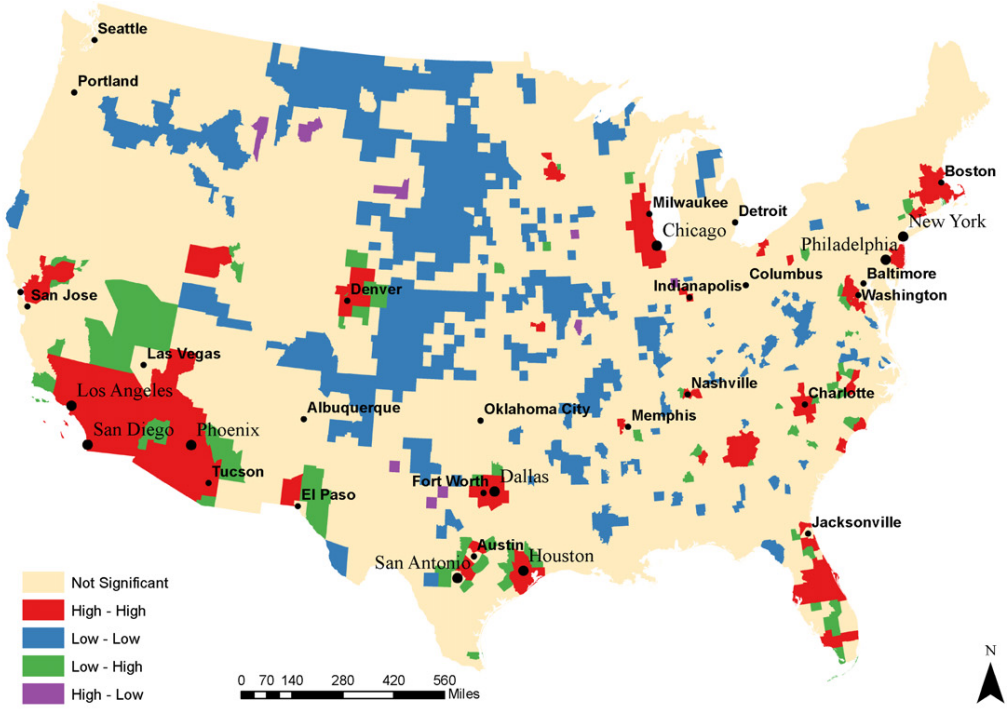
Howard considered "town-country" communities requirement of green space and a mixing of land uses ideal for citizens' well-being (Howard, E.; Schwanke et al, 2003). Howard identified the interplay of buildings, environment

and users as an integral part of well-being in town-country environments. Urban design is centered on understanding the relationships between the built and natural environments and users (Lang,2007; Ozdil, 2008) while landscape architecture is credited with designing the space between or where these relationships proliferate. Most often articulated in the public realm or public-private realm, urban design through landscape architecture provides a set of behavior settings (Lang, 2007). Within these settings is a milieu or a pattern of built form that includes the ground plane, surfaces of buildings and the elements and objects that bound it and structure it (Lang, 2007). This urban design milieu provides a conduit for relationships through activities, shelter and the creation of meaning or a sense of place (Whyte, 1980; Jacobs, 1992). It is in this domain that landscape architecture and real estate development meet and affect a discourse that drives the design of sites, neighborhoods, regions, cities and beyond as well as the design of spaces of economic activity. The space between and the connectivity or discourse therein drives social interactions that ultimately define society.

In contemporary settings, urban form is experienced through urban sprawl, fragmentation, and intermittent development (Downs, 1999). Over the course of history, US cities have experienced the evolution of urban form based on socio-political and institutional factors (Kaza, 2012). According to Kaza, in his study, The Changing Urban Landscape in the Continental United States, a higher level of infrastructure density is associated with higher urban development, while less infrastructure density affects more fragmented urbanization patterns – a pattern typically noted in rural counties throughout the US (Kaza, 2012). In

Texas, development patterns coupled with a higher number of issued building permits indicates that urban infill is driving force in affecting forms of urban design.

Texas' development patterns are consistent with not only Kaza's findings, but also complement the theories espoused by Stein and Howard. Figure 2.6 shows that Kaza's patterns of growth in Texas include a greater level of infill development in counties with high density, while low density counties are experiencing a greater level of fragmentation linked through transportation corridors and modes – a pattern not too dissimilar to Howard's vision of regional development as opposed to his town-country theory within a community (Kaza, 2012).



(a) Change in urban area

Figure 2.7 Patterns of Change in Urban Area/Density 2001-2006
SOURCE: (Kaza, , 2013; pg. 84).

Just as Howard noted, humans are neither best served by environments that support solely industrial objectives, nor are they best served by country environments that preclude human to human connectivity. The objectives of design balance economic growth, historic continuity, social order and comfort while enhancing surroundings (Lang, 2007). How such a balance is achieved by design changes over the course of time. The ability to balance the many variables affecting urban design inform how cities are created, enhanced, or undermined by urbanization patterns, sustainability requirements and urban impacts contributing to the overall urban spatiotemporal relationships explored by

Howard. As Clarence Stein noted, relating structures and natural settings to serve the needs of contemporary living or a sense of fulfillment, is the ultimate goal of creating urban space through design (Stein, 1902; Clark, 2003). Ian McHarg reinforced the concept and contemporary landscape architecture recognizes the value of their craft as the intersect of society and the environment. Responsible for the space between, landscape architecture is uniquely positioned to craft the forum of society in mixed-use developments/centers and beyond.

2.4.2 Real Estate Developer Perspective: Value of Landscape Architecture

Real estate developers in Texas are in the business of creating personal wealth while at the same time scripting urban form through development. A prerequisite for financial success of mixed-use projects is a strong local economy. The generation of value through real estate developments is first and foremost driven by the economic health of a region as it reduces risk of investment loss for both developers and those financial institutions that fund developers.

Financial feasibility is an individual investor's assessment of how or to what extent real estate investments can create a high enough rate of return to achieve an overall profitability ratio desired by developers and their investors. Developers desire higher rates of return from denser developments with built-in infrastructure access and a ready clientele. On the other hand, governments are interested in the ability of such investments to create tax revenue and tertiary opportunities for development or investment.

de Groot et al's study to understand the valuation of ecosystem functions, good and services includes an assessment of the socio-economic value of goods and services provided by natural and semi-natural ecosystems (de Grout et al, 2002). In particular, de Groot et al links economic valuation methods to these ecosystems. De Groot identifies four basic economic value methods including, direct market value, indirect market value, contingent market value and group valuation. The definitions of these valuation methods are as follows (de Groot et al, 2002; Stewart, 2014):

- "direct market value" entails an "exchange value" linked to production and recreational functions;
- "indirect market value encompasses the concept of willingness to pay. Unlike exchange value, indirect market value includes elements of cost avoidance, replacement cost, factor income, travel cost and hedonic pricing.
- "contingent Valuation" poses alternative outcomes to determine the value individuals place on a product, place, etc;
- "group Valuation" is an assessment of value based on open-public assessment of value versus individual preferential value.

Real estate valuation, including that of mixed-use developments is heavily weighted in the concept of indirect market valuation, in particular the hedonic pricing valuation. The hedonic pricing method plays an important role affecting mixed-use center development in urban infill sites. In particular, developers seeking financing to create mixed-use developments must provide a feasibility

assessment that includes “financial tangibles” achieved over the long run (Carmona et al, 2001; Stewart, 2014). Collectively tangible deliverables such as increased rents, property tax generation from the site and adjacent communities and improved property sales prices, etc. are coupled with the socio-economic intangible or indirect variables such as ecosystem services. Ecosystem services include provisioning services such as water, food, timber, etc., regulating services such as air purification, erosion control, etc., and cultural services such as recreation, knowledge and education, landscape aesthetic and inspiration ecotourism and perceptions of social standing (Wei et al, 2017). Cultural services are most applicable to mixed-use developments/centers in urban infill contexts as cultural services drive how people feel about space and their place within it (Wei et al, 2017; Dickenson & Hobbs, 2017; Beichler, 2015; Scholte et al, 2015;). The Hedonic method recognizes that individual preferences play a role in determining value for properties, whether urban, suburban exurban (Bartholomew & Ewing, 2011; De Sousa et al, 2009; Stewart, 2014). Thus, the hedonic pricing methods, inclusion of ‘use’ or intangible services such as social value, extend the value of urban infill such as mixed-use center developments to include the value individuals place on social interaction within urban properties. It is in this realm of intangible where landscape and economics meet to affect desired outcomes of both the development community and those they seek to affect success of their developments – users.

Rabiansky et al (2009) explores the physical phasing, design and public policy factors affecting mixed-use development feasibility. In particular, the physical features necessary to support development feasibility include:

- Size and shape must be sufficient to integrate uses without overcrowding;
- Connectivity or integration into neighboring communities allows for easy access to and from surrounding areas;
- Density of mixed-use should be reflective of surrounding density patterns or transition seamlessly to surrounding community.

Rabianski et al further outlines that “place-making” is a necessary component of mixed-use developments. The inclusion of public gathering spaces, walking trails and parks provide buffers to mitigate land use transitions, and allow for multiple functions and improved walkability and create a sense of place. Collectively, these traditionally non-revenue generating elements improve rental revenue opportunities from adjacent properties (Crompton, 2001; Stewart, 2014). Rabianski et al recognizes that distinct elements alone provide little economic return as transitional public spaces have a role in integrating complementary buildings through connectivity at the street level where place-making happens (Rabianski et al, 2009).

In summary, developers are a key driver of the production of space and though this space the urban fabric of a region is formed (Robin, 2018). In essence, urban fabric is first a reflection of finance categories of risk, return and liquidity as opposed to the needs of local citizens. Developer’s first goal is to affect a financial benefit to investors in mixed-use developments. The ability to harness design to increase hedonic value of a mixed-use investment creates a bridge between design and economic outcome. Crompton explores the economic value of parks in urban, suburban and fringe contexts. Crompton’s study is an

extensive literature review indicating 20 of 25 parks studied provide an improvement in property values depending on proximity to the urban green spaces (Crompton, 2001; Stewart, 2014). The extent to which such green spaces are activated provide a passive amenity within which economic value improves. Landscape architecture creates a framework within which to optimize hedonic pricing by designing the intangible elements of space that give rise to a sense of place and fosters the human experience.

2.4.3 Public Agent perspective: Value of Landscape Architecture

The role of government policies in determining the form and fabric of urban space is extensive as the interactions of public debt, urban codes, and environmental and urban policies in general contribute to the economic feasibility of real estate development (Delisle, & Grissom, 2013; Sterne et al; 2014). Enora Robin's paper, *Performing Real Estate Value(s): Real Estate Developers, Systems of Expertise and the Production of Space*, takes on a slightly more cynical tone as it relates to the inter-working of financial feasibility and the production of space. In particular, Robin notes that the recent emphasis on "performativity of economics" impacts the built form (Callon, 2006; Robin, 2018). In particular, Robin explores the redevelopment of Kings Cross Central in London, England where she notes the inter-workings of governmental planners, subject matter experts such as developers, architects, engineers, etc. and financial markets. In her findings, Robin finds that the use of financial projections and other tools can shape the urban spatial patterns.

Per Rabianski et al, governments' concept of feasibility also includes a necessary interplay with the surrounding community such that economic and social benefits extend beyond the property line of the development. Yet the per formative economics or financial approach often results in a disconnect between the exchange value and use value of land from the cultural values and contextual meaning of place point of view (Savini & Albers, 2016). Savini and Albers further purport that urban form is driven by expectations of urban growth and often times fail to reflect differing demands of urban spaces, housing and facilities needed in a site (Savini & Albers, 2016). In essence, the built form often reflects the investors or investment vehicles used for its creation versus the function necessary to meet the needs of the community of users.

As developers seek funding resources to take advantage of growing market opportunities, so too they seek out area expertise to reaffirm their projections and the case for fiscal return (Miller, 2001). According to Robin's study of Kings Cross, developers adeptly leverage urban expertise of service providers to legitimize their investment priorities and values they assign to space (Robin, 2018). The use of master plans provide an opportunity for governments to establish a framework for real estate investment in the urban realm that achieves both investment goals of developers as well as those of the public or surrounding community. Regions lacking a robust master plan often affect development on a project-by-project basis. Government officials pressured to attract investment make decisions that often result in developer centric values. The developer centric values of profitability do not always reflect the needs of a cities urban fabric as a whole (Robin, 2018).

Robin's study often refers to "expert professions," such as developers, city planners, engineers, architects, and landscape architects, community consultants, etc. as "actors" in a play (Robin, 2018). Landscape architects, architects, engineers, etc. economically benefit from the discourse between developers and governments. In her conclusion, Robin suggests that the rise of expert professions should be understood in the context of how their work is shaped and used to serve developer strategies. By recognizing the financial drivers and relationship between developers and governments, landscape architecture is better positioned to affect design to include user benefits – especially in cases where strong master plans do not exist. Landscape architecture provides an opportunity to play a critical role in re-affirming Stein's definition of urban design, "the art of relating structures to one another, and to their natural setting to serve contemporary living" (Stein, 1955; Lang, 2007) as opposed to merely suiting contemporary financial market demands.

2.4.4 Chapter 2 Summary

In summary, the landscape architect can serve as a mediator of the built environment through design and nature because landscape architecture sees urban space though a lens focused on the connectivity and programming within a space. It is not so much the structure of space that is at the forefront of a landscape architects lens, but how the space influences users within a space. The production of space at the hand of developers looking for a return on investment may result in a suboptimal design if the differing user needs are overlooked for the sake of high rent. Lord Roger's Urban Task Force report

(1999) cites that urban open space should not be considered a separate or detached component of urban design, but a vital one (Rogers et al, 1999). His findings note that, “public spaces work best when they establish a direct relationship between the space and the people who live and work around it” (Rogers et al, 1999, pg. 57).

Some literature is critical of landscape architecture noting that designers distance themselves from the behavioral sciences (Lawson, 2006). In doing so, landscape architects fail to understand whether or not the artistic design affected is achieving the intended social result. The value of landscape, in turn, precipitates from differing interpretations of whether or not a design meets the needs of users, investors and governments (Miccoli et al, 2014). This gap between art and design and design and user base is being addressed through Landscape Architecture Foundation Post Occupancy Evaluation (POE) studies, which serve to provide a quantitative as well as qualitative assessment of project success. POEs, however, have limited impact on future design as practitioners rely more on intuition versus tangible post occupancy studies (Masters, (2012). Masters’ study further reports that practitioners feel that post occupancy evaluations are framed in a positive light and landscape architect are adverse to constructive criticism. Such sentiment with the design community further supports a greater level of understanding of the wants and needs of all stakeholders of mixed-use developments.

The value of landscape architecture must be seen through an interdisciplinary lens, as the target market for landscape includes all stakeholders, users, investors and governmental bodies, etc. (Van Assche et al,

2012). Assessment must take place in many stages and in many forms. According to Miccoli, landscape architecture in the development stage is seen as a supportive roll to planning (Miccoli et al, 2014). The supportive nature of landscape architecture is consistent with Enora Robin's allusion to a cast of a play that ultimately serves the whims of developer goals. Based on historical trends, as society grows and modernizes, the wealth of society will expand while the interplay between society and nature will decline (Robin, 2018). The value of landscape architecture depends on whether or not landscape architects properly articulate their role in creating a balance between per formative economics and use of space in mixed-use developments. Landscape architecture provides a common thread that transcends individual incentives of mixed-use stakeholders by creating a forum for human interaction or social science.

Chapter 3

Research Methods

3.1 Introduction

This chapter describes the research methods used in this thesis. This study utilized qualitative research methods, including in-depth interview data analysis, passive observations and secondary data review. The chapter further outlines the benefits of constructivist grounded theory approach to research to better understand insight across the built urban environment (Allen & Davey, 2018). The objective of this study was to understand developer perceptions of the value of landscape architecture at the pre-development stage of mixed-use center developments in Texas. Research about all stages of mixed-use development provided novel insight into the goals, theories and practices of mixed-use center developers as opposed to that of the landscape architecture professionals. This chapter details research design, study population, data analysis methods, and acknowledges limitations, bias, errors and/or significance of the research.

3.2 Qualitative Research Approach

Taylor and Bogdan's 2015 4th edition of Introduction to Qualitative Research Methods – The Search for Meanings, outlines methods of qualitative research used in this study. In particular, the in-depth interviews are described as, "flexible and dynamic" as the interviews resembled a conversation among equals versus a rigid dialectic of questions and answers between interviewer and interviewee (Taylor & Bogdan, 2015). Prospective developer interviewees were

identified through discussions with landscape architecture faculty and through online research. Prospective participants were contacted via email, phone or in person. Internal Review Board (IRB) protocols for subject solicitation were completed and in-depth interviews were conducted with developers of mixed-use centers in Texas. Qualitative research via the in-depth interview method allowed for instances where “n of one” can yield sound data provided that the interviewee, as informant, maintains depth of knowledge of the topic of study.

The interview data was complemented with information obtained from passive observations of the respective mixed-use center developments and information obtained through comprehensive literature review of secondary data by the researcher. In-depth interviews were chosen as the preferred method of qualitative research because that research method allowed for the following; (1) study participants answered questions in as much depth as they desire, (2) information about participant’s attitudes, values, and opinions were obtained and contextualized, (3) the method provided flexibility such that participants offered data and insight that may not have been identified prior to the interview (Taylor and Bogdan, 2015). The literature review was conducted to understand differing considerations of “value.” Information obtained through the in-depth interview process helped to outline the developers’ differing considerations of value and establish a matrix of value considerations across the study population of developers and landscape architects. Passive observation locations were determined by the voluntary participation of developers of the respective mixed-use development centers. Information obtained in the passive observations

serves to better understand how the respective participants affected landscape architecture in a mixed-use environment.

3.3 Research Design

This research assessed developer perceptions of the value of landscape architecture in mixed-use centers in Texas. Literature review provides a basis for defining the term “value” from both the real estate development and landscape architecture perspectives. Precedent definitions of “value” in general and “value” to the respective disciplines of real estate development and landscape architecture support further study through this research.

In-depth interviews conducted to ascertain the perception of the value of landscape architecture to developers of mixed-use centers in Texas inform research regarding development considerations of landscape elements affected in design. Passive observation locations were determined by the voluntary participation of the respective location developers in Texas.

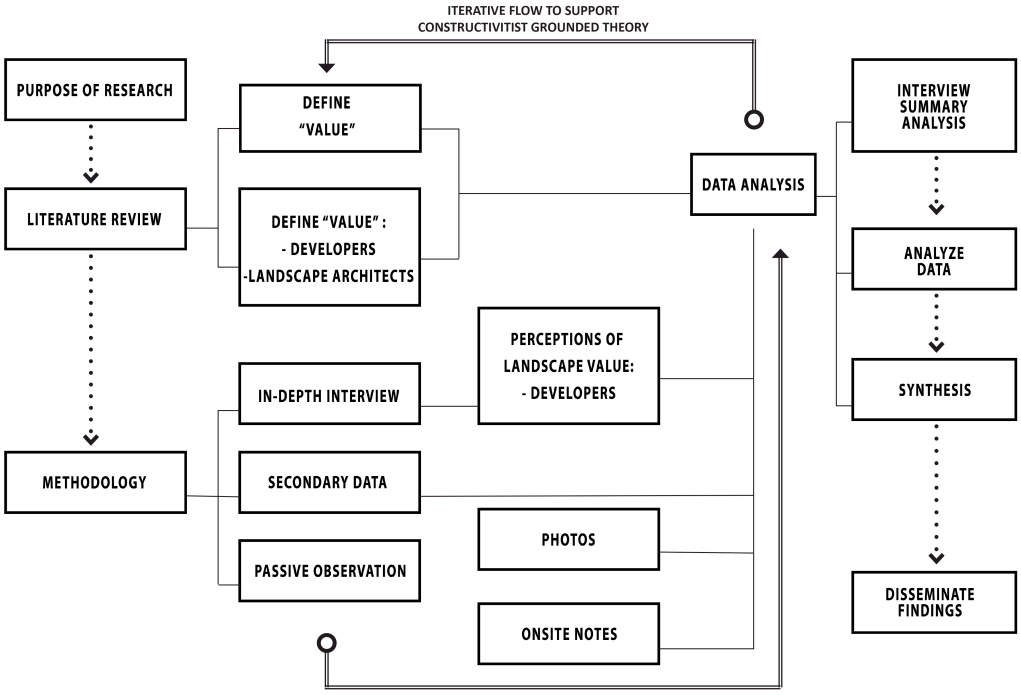


Figure 3.1 Constructivist Grounded Theory Diagram
Source (adapted): Pradhan, 2017; Charmaz, 2005.

3.4 Data Collection Methods

The study utilized primary data collection through in-depth interviews and passive observations of related mixed-use center developments in Texas. The study also used secondary data to provide location and market segment information. In-depth interviews provided insight into mixed-use centers at the design development stage and throughout the ownership of the mixed-use developments by the developer. In particular, participants were asked about their understanding and perception of landscape elements prior to and throughout the landscape installation. Literature review identified a foundation of value concepts for both landscape architecture and real estate development.

The in-depth interview process built on this foundation to include specific knowledge of how landscape architecture enhances or detracts from mixed-use center developments in Texas. The purpose of the research was to identify developer perceptions of the value of landscape architecture such that landscape architects can affect design consistent with their client desires while at the same time balance their value principles of health, safety, and wellness. The primary data from participants coupled with landscape architecture literature identified gaps in value principles for the respective professions. The gaps provide a landscape architects with a framework for design development decision-making and a foundation for bridging the value system in landscape architecture with that of developers of mixed-use centers in Texas.

3.4.1 Study Population and Location

Developers of mixed-use developments/centers located in Texas were the target population of this study.

3.4.2 Interview

Interview procedures were consistent with University of Texas at Arlington Internal Review Board (IRB) requirements for human subjects (See Appendix A). Literature review informed interview protocols as foundational information. IRB approval was necessary to ensure the rights of the study participants were maintained.

This research focused on real estate developers view on the value of landscape architecture. Upon approval of the research protocol, participants

(developers) were contacted through personal connections and or through a recruitment letter (see Appendix A). Snowball sampling method was used to identify and recruit subsequent research participants (Goodman, 1961). All participants were identified as developers of mixed-use centers in Texas. After participants were identified and recruited, a mutually agreeable location and time for the interviews was established and interviews are conducted. Interview responses were recorded and subsequently transcribed to maintain the integrity of the information used in data analysis. Interview responses were kept confidential as no identifying data was used in communicating research results. All identifying information was limited to the respective participant, the researcher and members of the researcher thesis committee.

Interview Questions

The interviews served to illuminate Texas mixed-use developer's perceptions of landscape architecture at the pre-development stage. In-depth interviews were identified as the most effective means of data collection because open-ended questions allowed the participants to develop their responses and potentially enrich the data set by articulating information not previously considered by the researcher (Charmaz, 2011). The flexibility of such responses allowed the researcher to refine their questions, and with IRB approval, to encompass data developers considered relevant to the research questions. The interview questions commence with background and profile information on the participant's professional experience and an exploration of the business domains of their company and/or employer. Further in-depth questions pertained to the

participants understanding of “value” and how the concept of “value” is considered within their business of mixed-use center development. Additionally, the interview explored the developer’s consideration of landscape as a component of mixed-use development at the pre and post-development stages. Participants were asked to identify development feasibility targets for mixed-use centers and to identify how elements of landscape architecture are considered or budgeted as it relates to design feasibility. The final stage of the interview requested insight into what role landscape architecture plays in design development for mixed-use developers in Texas. Detailed questions can be found at Appendix C.

3.4.3 Secondary and Archival Data

Secondary data were used to understand the drivers in real estate development such as return on investment, etc. Additionally, secondary data provided insight into value considerations of both the real estate investment and landscape architecture professions. Secondary data included commercial real estate trends data from Deloitte Touche and US Census data. An understanding of the consistencies and gaps of incentives or professional drivers informed interview questions and identified areas of opportunity for landscape architecture to affect design from both a qualitative (health, safety, and wellness) and quantitative perspective (return on investment).

3.4.4 Passive Observations

Passive observations were used to provide background data to the researcher prior to meeting with interview participants. An understanding of mixed-use centers affected by the voluntary respondents provided reference data, established a rapport with the participant and enhanced the interviewers understanding of the participants perspectives on mixed-use center development (Taylor & Bogdan, 2015). The researcher utilized a passive observation form to understand the elements of landscape architecture in use at the respective mixed-use centers and to observe visitors use of such elements. Observations were recorded on both weekdays and weekends between 10:00AM CST and 6:00PM CST. See Appendix C.

3.5 Data Analysis Procedures

Data collected through in-depth interviews, passive observation and secondary data are reported in tandem for analysis purposes. “Constructivist grounded theory approach” was used to generate themes and codes from both literature review data and interviews with participants. Grounded theory is described as “the discovery of theory from data (Glaser & Strauss, 1967, 1). Grounded theory also allowed for illumination of issues from understanding the “real life experiences of the actors” (Allen & Davey, 2018) and places deference on the interpretations of reality versus testing hypothesis about reality (O’Reilly et al, 2012). In-depth interviews provided flexibility to engage participants contextually – participants has the opportunity to add additional insight (not previously understood by the researcher) from their own experiences.

Constructed grounded theory further builds on this flexibility as it allows researchers to abstract subjective experiences to form insight into a “collective understandings or relationships amongst actors” (Allen & Davey, 2018). Allen and Davey further articulated that constructivist grounded theory was well suited to urban research because human experiences are contextual in nature as it relates to one’s perspectives of districts, cities, regions, etc. (Allen & Davey, 2018).

Four criteria of built environment grounded theory research have been described by Charmaz, which include, credibility, originality resonance, and usefulness (Charmaz, 2005; Allen & Davey, 2018). Credibility is established through comprehensive literature review of topics of topics pertinent to the research and the experiences of the research participants. Originality, resonance and usefulness are achieved through the flexible in-depth interview process and the ability to further reference pertinent literature topics identified through the in-depth interview process. Constructive grounded theory approach is iterative as the researcher constantly cross-referenced ideas and concepts over the course of the study. Such cross-references provide further insight into similarities and dissimilarities regarding the value perspective of mixed-use center developers and landscape architecture practitioners. Charmaz also noted, that constructivist grounded theory includes a comparison of participant definitions of key concepts against those of academic and conventional thought. For the purpose of this study, secondary data and literature review of value concepts considered by landscape architects served as a proxy to individual in-depth interviews of landscape architecture practitioners. Coding of both interview and literature data

give rise to value themes or domains, which can be compared and analyzed. Within the respective domains, taxonomies were identified which include attributes of the domain. Constructivist grounded theory is a considered a "pragmatic and logical approach" to discovering new knowledge in disciplines of the built environment, architecture, landscape architecture, urban planning and urban design (Charmaz, 2011; Allan and Davey, 2018). As noted in Figure 3.2, process was iterative and allowed the researcher to continuously compare and contrast data such that information gained was understood collectively versus individually.

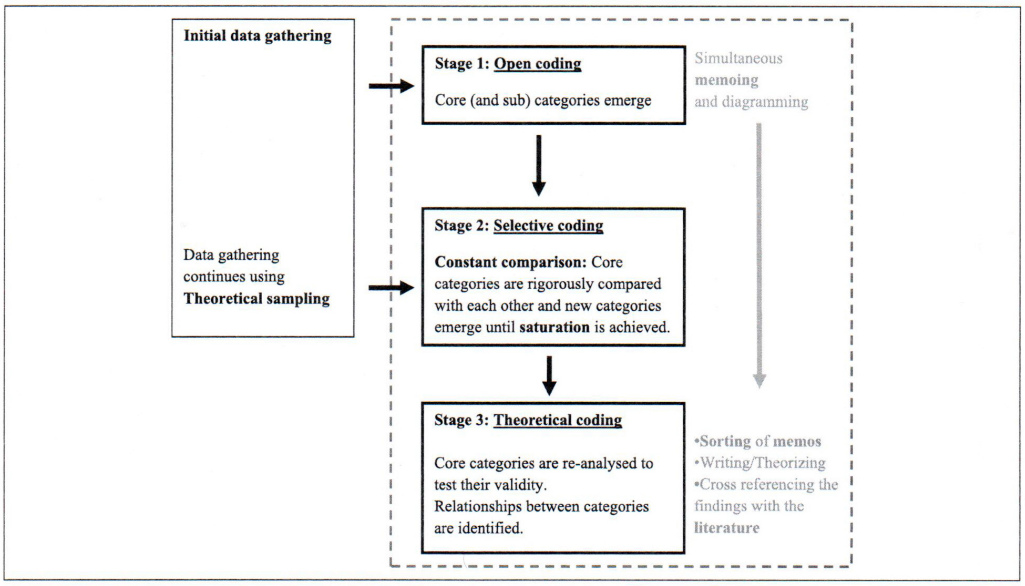


Figure 3.2 Diagram of Constructivist Grounded Theory Coding Flow Chart
Source: Jones and Alony, 2011, 104); Allen & Davey, 2018, pg. 223.

Interview data, secondary data and literature review data were analyzed and categorized into codes and themes. Data obtained from participants were compared and contrasted with value definitions and considerations outlined in

the literature review. The synthesis of this information resulted in thematic perceptions of value as it related to landscape architecture in mixed-use centers in Texas. Similarities and dissimilarities outlined opportunities to bridge both developer and landscape architecture's understanding of value in mixed-use centers in Texas.

3.6 Bias, Error and Delimitations

Qualitative research involving human participants is subject to error. Research quality was linked to the concept of transparency (Deming & Swaffield, 2011) or the lack of human bias. In-depth interviews, passive observations and secondary data may have contained hidden bias unrecognized by the researcher.

Human bias may have also existed on the part of the researcher and the flexible nature of the in-depth interview may have resulted in varied responses that could influence the contextual meaning of responses. The differing professional experiences of the study subjects may have influenced interview responses depending on the experience level of developers in mixed-use center developments.

Time, resource and geographic limitations precluded all potential mixed-use center developers to be included in this study. The researcher sampled varied sizes of mixed-use centers, which may or may not give rise to differing perspectives on the value of landscape architecture. The researcher utilized thematic coding, which may have precluded data, significant to one or few of the

respondents to be captured. Every effort was made to capture the contextual significance of participant responses.

3.7 Chapter 3 Summary

Constructivist grounded theory was used to assess the perceived value of landscape architecture to mixed-use developments/centers in Texas. Constructivist grounded theory is an iterative process that allowed the researcher to actively utilize literature, in-depth person-to-person interviews and secondary data. Literature review provided the researcher with a foundation for understanding mixed-use development/center considerations of value, as well as, considerations important to the discipline of landscape architecture. In-depth interviews provided insight into the perceived value of landscape architecture by mixed-use developers and allowed the research to gain additional insight to considerations important to mixed-use developer business models. Interview data, literature review and secondary data were analyzed to determine similarities and dissimilarities in perceptions of the respective respondents. Responses were coded to determine patterns of perspective and themes were established. The domains and subsequently, taxonomies were used to articulate the perceived value of landscape architecture to mixed-use developers.

Chapter 4

Analysis and Findings

4.1 Introduction

The Analysis and Findings Chapter outlines the analysis of eight in-depth in person and telephone interviews conducted with mixed-use developers in Texas. The interviews were based on a pre-determined and IRB approved set of questions, however, the grounded theory method is contextual in nature allowing for respondents to provide open ended responses to the interview questions. The interview process included three stages of inquiry. The first stage included an understanding of the respondent's respective levels of education, years of experience and financial value of real estate development investments. The initial set of questions provided insight into the experience of developers in real estate investment in general and in mixed-use developments.

Secondly, the in-depth interviews provided insight into the respondents understanding and perceptions of the value of landscape architecture. The second group of questions identified the developer's knowledge and/or consideration of landscape architecture as a discipline and the role landscape architecture elements take in affecting fiscally feasible mixed-use developments in Texas.

Third, the interview process included open conversational observations and insight provided by developers on the state of mixed-use development in Texas, observations of mixed-use centers existing within Texas and perceptions of the value landscape architecture in mixed-use centers.

Following the in-depth interview process research data were organized according to themes or domains generated from interview discussions. The themes were further stratified into taxonomies to determine if developer investment strategies maintained similar thematic investment and landscape perspective principles. Consistent with grounded theory, the findings were compared and contrasted to provide insight into the perceptions of value of landscape architecture in mixed-use centers.

4.1.1 Participant Profiles

Twenty (20) mixed-use developers were contacted of which ten (10) agreed to interview participation and eight (8) were available to meet prior to the end of the semester. Participants included leaders who are principals or executives at Texas real estate development firms affecting mixed-use development in Texas. During the initial engagement process, prospective interviewees indicated they play an active role or decision-maker role within their firms as it relates to design of mixed-use developments in Texas. Figure 4.1 provides information on interviewees.

	Exp.	% of Mixed-use	Company Size	Title	Education	Inv. Horizon	Funding Source
R1	15+	60%	<100	CEO, President	BS Business M. Accounting	10yr+	Self
R2	20+	10%	15	EVP, Commercial Development	BS Architecture M. Real Estate	10yr+	Self (Public)
R3	20+	10%	<20	Co-founder	BA Liberal Arts M. Real Estate	<5yr	Self/Financed
R4	20+	20%	100+	Executive VP	BA Finance and Real Estate	10yr+	Self
R5	15+	60-70%	10	Founder, Principal	BS Architecture MBA	<5yr	Self/Investor
R6	30+	10%	40	Founder, Principal	BS Engineering MBA/M. Engineering	10yr+	Self
R7	15+	60%	<5	Founder, Principal	BA Liberal Arts	<5 yr	Self
R8	30+	10%	100+	President & CEO	BS Psychology JD Law	<3-5yr	Self/Financed

Figure 4.1 Mixed-use Respondent Background, Experience and Investment Strategy

Respondent demographics include background, real estate investment experience, real estate investment portfolio allocations in mixed-use centers and funding sources. The average experience in years of respondents was 21 years, with the most seasoned respondents having 30 years experience while more novice developers averaged 15 years of experience. 75% of the respondent obtained a business degree at the graduate level. On average respondents maintained 30% of their real estate business portfolio in mixed-use investments. Overall company size of the respective respondents varied. Of note, respondent corporate expertise was limited to finance, planning and construction disciplines. According to interview participants, no respondents acquired design services “in-house.” All respondents noted that self-funding was a component of overall investment strategy while, 50% of the respondents did not seek outside funding

as a source of investment capital. All respondents' companies are considered privately held, therefore, information about company and portfolio size and mixed-use exposure was at the discretion of the respondent.

4.1.2 In-depth Interviews

In-depth interviews included six (6) questions that explored mixed-use developer understanding of landscape architecture as a discipline and how developers perceive the value of landscape architecture in the context of developing and investing in mixed-use developments. All participants in this study offered open-ended responses to interview questions, thus, the scope of information gathered during the in-depth interview was not limited to question topics per se.

Question 1, What is landscape architecture to you? Generated responses included references to user experience, sense of place, and connector. Two respondents did not mention sense of place, however, one of those respondents noted a commitment to "user experience" which may be considered as sense of place by other respondents as the term is used interchangeably. References to "the space between" or landscape as connector was an overwhelming expression of respondents. One respondent considered "rent premium" as secondary to creating a "sense of place". The respondent went on to note that a "sense of place" will create the rent premium. One respondent seemed to consider landscaping and plant materials as the main contributor of value of landscape architecture. Streetscape and user experience on a human scale were noted as an attribute of landscape architecture critical to successful mixed-use

centers. One respondent noted that his company considers landscape similar to interior design – noting that landscape is an exterior room that connects people. Another respondent noted that landscape architecture "is the bridge between business and the city."

Question 2, at what point in the design development process does budgets for items such as landscape architecture come into play? elicited a relatively consistent response amongst interviewees. All but one respondent noted that landscape budget is allocated "upfront" when investment/mixed-use center proforma feasibility studies are completed. When asked about percentage of investment budget allotted to landscape architecture, respondents noted that projects were budget dependent. One respondent, R4, noted that budget associated with landscape met or exceeded that of architecture in the pre-development stage of development. All but one respondent noted that after reviewing the gross investment cost, "value engineering" (reduction in budget) of design components such as landscape architecture are reviewed to ensure the development is on budget and the priorities of design elements contribute to the overall investment strategy. R8, the single respondent who did not note an upfront commitment to landscape architecture as part of the design process, indicated that landscape architecture was a post development design consideration.

Question 3 explored the concept of landscape architecture as it impact project feasibility. Respondents noted that landscape was important in that is acts as a buffer to the surrounded community, however, R1, R4, R3, and R5 noted that landscape was critically important to creating a sense of place. R5 and

R4 further outlined that code requirements for landscape failed to deliver a sense of place and thus an optimal experience for users. R5 further noted, that landscape elements in places that users cannot engage with “are not worth it.” He, along with sentiments expressed by R5, explained that landscape elements along buildings versus those that actively provide shade or open space, fail to create a sense of place or enhance the user experience.

In Question 4, participants were also asked about design elements that contribute most to their respective value definitions of landscape architecture. Responses did not identify specific items like benches, shade structures, etc. but focused on overall user experience, creating a sense of place and access to green space. Respondents R3, R4, R5 and R6 specifically focused on user experiences while R2 and R7 did mention the value of landscape if it is an expectation of their client base, renters.

The value of landscape architecture elements was further explored in Question 5. Consistent with Question 4, no one specific element was noted as providing a singular impact in mixed-use environments. On the contrary, the collective of streetscapes, green and open space, furnishings, signage and pathways and activity spaces create a forum for interaction both socially and economically.

When questioned about the importance of green and open space, private courtyards and green space were of particular interest to 50% of the respondents as they noted an increase in property values due to proximity to green space, an increase in health and wellbeing of users and/or creating a sense of place.

Respondents with shorter investment horizons, R7 and R8 indicated that open space is a benefit if tenants or prospective tenants require it.

R1, and R4 noted that signage was not an important part of mixed-use development due to visitor's "sense of place" through landscape. The majority of respondents mentioned code minimum requirements. 75% of respondents felt that code minimum landscape requirements were not adequate to provide an appropriate experience or "sense of place." Respondent R7 recognized the value of codes as he noted that if cities did not require it (landscape) "…they'll (developers) will just maximize the concrete and not care," however, R7 went on to note that successful mixed-use developments must go beyond code.

Participants were also asked about landscape architecture as it relates to operations, maintenance and construction costs. Respondents noted concern over irrigation availability and cost and the impact of irrigation on the lifetime cost of plants. Irrigation is noted in the context ensuring that plant materials survive in Texas.

4.1.3 In-depth Interview Open-ended Responses

The open-ended response design of the in-depth interview generated responses not previously considered by the researcher.

- Employee recruiting, retention, satisfaction and productivity:
    - R7 reflected on his career in development and noted a trend in the composition of development stakeholders. In particular, R7 noted that in recent years human resource executives actively participate in choosing real estate amenities, locations and the

necessity for green space. R7, R4 and R6 considered employee recruitment, retention and satisfaction as a benefit of landscape architecture and development amenities. R7 and R4 also noted that the ability of employees to work remotely creates an opportunity for mixed-use typologies. R4 and R6 further noted that access to green and open space was a matter of health and wellbeing of users and provided a live, work, play environment that can improve user experience and productivity. R4 specifically noted the influence of European work environment requirements such as requiring a window every 30 feet so that employees can see the outdoor green space. R4 noted that the EU mindset on the importance of landscape architecture within their developments, mixed-use and other wise, is now part of their investment strategy.

- Landscape architecture as a means to engage the community:
    - R1, R4, R5, R6 and R7 noted that landscape architecture not only provides connections between spaces within the mixed-use center, but also creates a link of the center with the surrounding community. R5 notes that landscape has the ability to connect or bridge the city and the business.
- City code and the value of landscape architecture:
    - R1, R5, and R7 indicated that increased regulation or code requirements were not desirable. R7, however, admitted that without codes/zoning requirements, developers would utilize more

concrete and less green space in landscape architecture. R7 went on to note that focus on profitability is the most important thing to developers. R1, R3, R4, R5 and R6 indicate that a significant focus on user experience makes code irrelevant. R5 notes that landscape code requirements often fail to optimize user experience and are often non-value-add ornamentation.

- Tenant mix impacts value of landscape architecture:
    - R1, R3 R4, R5, and R6 indicate that tenant mix or targeted mix informs the forms of landscape architecture. Green and open space provides opportunities for exercise or gathering while shaded seating areas provide respite for restaurants, etc. R1, R4 and R7 specifically noted that change in tenant mix is driven by technology as online shopping reduces the demand for and dependence on retail. Respondents also indicated that user experience is critical to affecting a successful mixed-use center development.

The free and open reflections and observations of mixed-use developers provide insight into nonconventional contributors to the value of landscape architecture. These nonconventional contributors may be considered intangible benefits as they relate to the concept of hedonic pricing and intangible benefits of landscape architecture. Understanding all facets of how landscape architecture is considered by developers, users and visitors creates a better understanding of its value.

4.2 Summary of Analysis and Findings

The first step in grounded theory is to code the interview data via a two-step process (Charmaz, 2011). Open coding was completed to make analytic decisions about the data. After the open coding process, selective or focused coding is used to synthesize and conceptualize data (Charmaz, 2011). Line by line coding of the interview data is completed.

4.2.1 Open Coding to Create Research Domains

Open coding is used after an overview of the interview response data. In particular, open coding for the purpose of this research groups developers into domains or key attributes that were deemed consistent among more than one respondent (Atkinson & Abu el Haj, 1996, Spradley, 1979). The domains are intended to identify overarching similarities of respondents that impact perceptions of landscape architecture. Code indexed interview data reveal three primary investment strategies amongst mixed use developers. Investment strategies inclusive of investment horizon are identified as an overarching domain in this research. Sub-categories of this domain or taxonomies are noted in Figure 4.2;

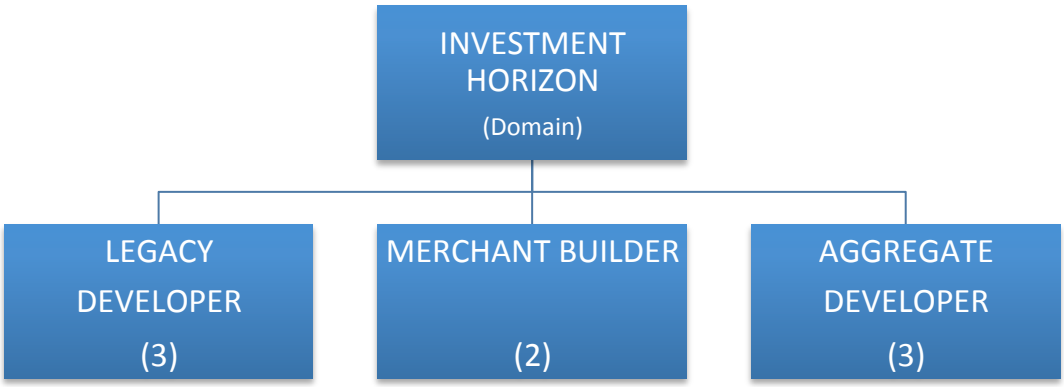


Figure 4.2 Taxonomies as Subcategories of Mixed-use Developer "Investment Strategy"

Mixed-use developers investment horizon differentiate mixed-use developer taxonomies. investment horizon is often coupled with an increased level of personal investment or developer's own money, in mixed-use developments and an increased emphasis on establishing relationships within the mixed-use site and among community members. Literature review identified the importance of the human experience or creating relationships within the realm of design space. The sub-categories or taxonomies are determined based on iterative review of the interview responses. Beyond concepts of profitability or return on investment, interview data is reviewed to determine similarities in investment horizons and goals. This emphasis informed the determination of investment horizon as a domain of consideration for this research.

The sub-categories represent distinct investment goals as either investment horizons, or the timeframe during which developers plan on purchasing, developing, activating and selling investment developments and socio-economic impact of developments on users and surrounding communities

distinguishes three differing developer objectives. The respective taxonomies are defined as the following;

- Legacy developers or long-term developers consider landscape architects as partners in developing mixed-use development centers. Legacy investors maintain a long term or an 8+ year investment horizon and place precedence on place-making and community building;
- Merchant builder developers or short-term developers consider landscape architecture as a commodity. Typically operating on a 3-5 year (short-term) investment horizon, merchant builders place precedence on building, filling and flipping mixed-use investments to achieve the highest return on investment. Landscape as a commodity provides value in articulating a built environment in the development stages that will lead to outside funding and in creating user connections such that the project is built and sold for profit;
- Aggregate developers are investors with short-term to long-term "investment horizons;" these developers consider landscape architecture as a product. Aggregate developers place precedence on increasing return on investment by creating a mixed-use asset mix that provides interim investment liquidity and opportunities for legacy-like investments. Landscape architecture is considered critical to the success of mixed-use developments but the scope of work affected by landscape architecture is dependent on the level and length of investment in the mixed-use project. In some instances, aggregate developers (R7 and R3) desire a portfolio more heavily weighted in long-term community building mixed-

use investments, however, asset levels or investor preferences preclude this investment. Aggregate developers value landscape more than merchant builder developers and represent a quasi-partner with landscape architecture in mixed-use development depending on the respective mixed-use product they are bringing to market – sometimes it is merchant builder-like and other times, legacy-like.

4.2.2 Legacy Developers and the Value of Landscape Architecture

Legacy investors include mixed-use developers whose primary goal is to positively impact the community through place making. Legacy investors interviewed are primarily self-funded. According to the interview responses, outside funding sources can be considered a constraint on legacy investors from affecting investments due to fiscal return requirements or untimely access to liquidity request. Additionally, outside funding sources may require investment horizons, which are inconsistent with the optimal return on investment opportunities of certain mixed-use investments.

In addition to funding sources, legacy investors consider long-term (10+ year) investments as an investment in community and place making. Respondents R1, R2 and R4 were identified as legacy developers of mixed-use in Texas. The respective legacy developers perceive value in landscape architecture. In particular, each legacy investor noted that landscape architecture is a critical component of creating a sense of place and through that sense of place an economic value is achieved.

Of note, legacy developer, R2, maintains a long-term hold approach to investments, however, the vast majority of investments are in industrial non-mixed-use environments. Sentiments regarding landscape architecture, for the most part were consistent with that or R1 and R4, however, the specificity of responses was not as robust. Legacy investors R2 and R4 actively utilize LID design to mitigate adverse impact of developments on the surrounding community. Connectivity within development and into the community is noted by R1, R2 and R4 as important components of Mixed-use developments as landscape connects users with businesses.

Legacy investor R1 noted, “Thinking about place-making is where everything starts…you’re basically talking to someone who actually really appreciates and values the place-making of landscape architecture. As opposed to someone who’s just in it for a three to four or five year flip… they create value in terms of just creating cash flow and then … flipping it ”for a profit.” R1 also posited, “What is the place, what are you trying to create as opposed to what is the object?” R4 offered a similar sentiment when he noted, noted that his group is not looking into “flipping investments” and that landscape and open space is “fundamental for urban community.” R1 and R4 also indicated that street level experiences are an important factor in contributing landscapes. R4, referenced that landscape was “embedded” in place-making and so too that “the devil is in the details of really understanding the engagement between community and mixed-use urban spaces … open space is fundamental to urban community.” R4 also, further notes “landscape provides an emotional connection of the users and

visitors to the space." It is within this space R1 and R4's intentions are to create a better society through their investments and better investments through society.

According to respondents, entertainment, dining and retail drive street level experiences, although retail is considered a declining segment due to technology, according to respondents. Mixed-use development should not be considered a commodity but a permanent part of the community where connections should be made. Both R1 and R4 expressed concern that short-term investors may not affect a development that will continue to be beneficial to the surrounding community over time. R1, R2 and R4 recognized landscapes ability to provide connections within the development and into the community. R4 provided insight into his professional development and how his experiences shape current investment strategies. In particular, experience in mixed-use development in Europe informed R4 that access to green and open space, vistas from windows and outdoor connectivity is a critical component of employee health and wellness. R4's European experience drives the increased use of landscape architecture as a means of attracting tenants, employees and retaining both, over the long run. R4 actively retrofits previous investments to include green space and to tap into sentiments of in-development users and surrounding community members.

An overarching sentiment of the legacy investors was summed up by R1 in the comment, "There's so much going on here, it's, I think, sometimes maybe smaller developers salivate at the ROI (return on investment) more than they do on the ROC. Right? Return on (to) the community."

4.2.3 Merchant Builder Developers and the Value of Landscape Architecture

Merchant builders buy, develop, lease and subsequently sell real estate investments for a profit. Interviewees determined to be mixed-use merchant builders interviewed for this research maintain an investment horizon on average less than 5 years. Developer R8 noted that investment horizons are decreasing from an average of three years to 2 years. Other respondents noted, on average, proforma or projected investment hold is three years but incidence of four to five year holds exist if multi-phase investments are considered. R8 focused the majority of his perceptions on landscaping versus landscape. R8 noted that early in his career, landscape included planting without regard for the long-term upkeep of the installation. Today, R8 considers planting materials as a critical component to landscape architecture's value in mixed-use developments. R8 also noted that designing to achieve code compliance was a significant consideration of landscape architecture and that design of connectivity within the landscape was something achieved "down the road." R8 noted that "the more the landscape is interactive, the more it appeals to the clientele" but provided little indication that landscape architecture as a discipline informed connectivity or "interaction." R8 felt tenants drive design and thus, was reactive in his approach to the value of landscape architecture in mixed-use developments.

Respondents R5 and R8 provided additional insight into their perceptions of value of landscape architecture. R5 indicated that 50-60% of real estate investment was in mixed-use developments. R5 and R8 noted that landscape architecture is what makes the space between. R5 noted that landscape "..is a creation of urbanism and microclimates within and urban fabric. A suburban

context can be object-making, whereas an urban context can truly be place-making." All respondents noted that the budget related to landscape was site dependent and took into account the programming requirements.

Landscape architecture for R5 more so than the rest of the merchant makers, is critical to mixed-use development success as "landscape is fundamental to what they do" R5 responses were most consistent with legacy and aggregate mixed-use developers, however, R5 is committed to a short-term investment strategy and noted that his "ultimate goal" was to get a return on his investment. R5 considers private courtyards and streetscape as important contributors of value. R5 also noted that urban forms, informed by code rarely add value to mixed-use investments as users do not have tangible use for them – "it just looks good." R5 also noted that landscape architecture serves a purpose to "sell" the development not only to future tenants and the adjacent community but also to funding sources. R5 looks for a 10% bump in investment return due to landscape and identified landscape, as somewhat of a commodity service – "Designers need to know that I need to sell the project. I need to get it funded and sell it to the bank so that it could ultimately be employed as usable space." R5 further posited that good landscape architecture can "fill the void for a business from a business standpoint as landscape architecture can bridge the city and the business." Landscape architecture creates relationships through place making.

R5, and R8 noted that landscape element important to mixed-use include pots, streetscape and, with the exception of R5, signage. R5 was particularly fond of private spaces but all respondents noted that gathering spaces were

important. Green space was preferred but only if it is affected to achieve the highest possible rent. R5 was the only merchant builder respondent to champion flexible spaces such as closed streets to accommodate festivals.

4.2.4 Aggregate Mixed-use Developers and the Value of Landscape Architecture

Aggregate mixed-use developers maintain an investment portfolio that includes both short-term and long-term mixed-use holdings. According to respondents, investments in both short and long term mixed-use developments can be attributed to business operating cycle. In some cases, aggregate developers require a quicker return on investment that is achieved through merchant-builder-like short-term investments. While at the same time, holding a longer term investment in mixed-use developments/centers may provide future income opportunities. Aggregate developers include R7 who is in the process of establishing a new development entity. R7 investment strategy will launch as a merchant builder, however, interview responses inform of a more flexible development portfolio make-up. R7 intends to identify long-term investments as the business is able to support it. R5, noted as a merchant builder, employs an investment strategy most consistent with aggregate developers. R5's disposition as a merchant builder was established through self-evaluation.

4.3 Synthesis Typologies

In summary, analysis and coding of interview data allows for comparison among and across the differing investment domains. Landscape Architecture

attributes or taxonomies deemed valuable by developers within respective domains are noted in Figure 4.3.

LEGACY DEVELOPER	MERCHANT BUILDER	AGGREGATE DEVELOPER
Funding: Private	*Funding: Private/Third Party*	*Funding: Private/Third Party*
M-U as a % of Business: 10-20%	 50%+	 20-50%
L.A. Attributes of Value: ▪ Place making ▪ Distinguish place ▪ Attract Tenants ▪ Health and wellness ▪ User Experience ▪ Community ▪ Value creator ▪ Connector ▪ Open Space ▪ Hardscape ▪ Softscape ▪ Topography ▪ Shade ▪ Water features ▪ Gathering space ▪ Environment benefits ▪ Design “beyond code” ▪ Low impact design ▪ Setbacks ▪ Irrigation ▪ Distinguish place	 ▪ Return on Investment ▪ Attract Tenants ▪ Meeting code requirements ▪ Streetscape ▪ Connector ▪ Shade ▪ Plant Palette ▪ Irrigation ▪ Place making	 ▪ Place making ▪ Distinguish place ▪ Attract Tenants ▪ Health and wellness ▪ User Experience ▪ Community ▪ Value creator ▪ Connector ▪ Open Space ▪ Hardscape ▪ Softscape ▪ Shade ▪ Gathering space ▪ Design “beyond code” ▪ Irrigation ▪ Distinguish place

Figure 4.3 Value Attributes of Landscape Architecture Relative to Taxonomy

Legacy investors consider a larger number of landscape architecture attributes as valuable. All respondents indicate a goal for investing in mixed-use investments include profitability, however, for legacy investors in particular, profitability is considered somewhat equal to creating a sense of community. Legacy investors value landscape architecture as a partner in improving user experiences through connectivity, health and wellbeing of users, while merchant builders consider landscape as more of a means to an end (higher rental rates)

than community building. Aggregate developers are in a unique position as they recognize the value of landscape architecture in terms of indirect non-rent generating benefits (i.e. green and open space, health and wellbeing, creating community, etc.), however, their funding sources dictate the inclusion of shorter-term development projects.

The value of landscape architecture includes opportunities for increased rental income across all developer taxonomies as proximity to green and open space commands rental premiums (Stewart, 2014; Laverne & Winson – Geideman, 2003; Miller, 2001), however, interview responses provide insight into value beyond rental premiums. Mixed-use developments are a common urban infill development form in Texas. Understanding investment-funding sources, horizon and social considerations of mixed-use developers allows landscape architects to better understand how landscape architecture can contribute to mixed-use center developer priorities.

4.3 Chapter 4 Summary

The three developer typologies identified in this study, legacy, merchant-builder and aggregate, signify differing investment strategies. It is through these strategies the value of landscape architecture is perceived. Investors with shorter investment horizons value landscape architecture to the extent that it provides a desirable financial outcome. Investors, such as legacy investors and, in certain cases, aggregate developers, place more value on landscape architecture in creating long term value of place within the urban fabric of the developments itself and the surrounding community. Longer term financial

commitments or investments by mixed-use developers, drives a more holistic perception of landscape architecture. Profit is goal for all types of mixed-use developers, however, legacy or long term investment developers consider landscape architecture beyond profitability to include community wellbeing.

Chapter 5

Conclusion

5.1 Introduction

The purpose of this research is to understand if developers perceive landscape architecture to be a valuable component of mixed-use developments/centers in Texas and how such perceptions add value to their investment strategies. The research follows qualitative research methods to assess developer perceptions of value of landscape architecture including in-depth interviews. The research interviews resulted from interview requests obtained through blind solicitation and through personal emails. Interviews yielded insight into the perceived value of landscape architecture in mixed-use center typologies.

Knowledge gained through the interview process identified three distinct developer investment strategies and strategy driven attitudes towards landscape architecture. The distinct developer typologies were determined based on investment horizon or timeframe during which developers would commence financial investment in a site and subsequently yield profitability from the investment. The investment horizon or investment timeframe, were indicative of developer perceptions of the value of landscape architecture. These typologies relate to how developers perceive landscape architecture, as partner, commodity or product. The respective typologies of legacy developer, merchant builder, and aggregate developer, respectively, provides insight into the differing investment priorities of developers and how landscape is utilized across those priorities to achieve the highest possible financial return to the developer and, if applicable,

his investors. Of note, legacy investors also expressed the concept of “return (on) to community” or “ROC”, as a contributor to their perceptions of landscape architecture. By understanding developer or client priorities, landscape architects can provide improved design solutions bridge the objectives of financial success for its developer clients and socio-economic benefits for the community.

5.2 Research Questions Revisited

This research explores the perceptions of landscape architecture’s value to mixed-use center developers in Texas. This research used in-depth interviews to explore the concept of value of landscape architecture and also sought to answer three primary research questions;

1) Why invest in landscape architecture in mixed-use developments in Texas?
2) What role does landscape architecture play in creating mixed-use development/centers according to developers?
3) What aspects of landscape architecture are utilized most among developers?

5.2.1 Why invest in landscape architecture in mixed-use developments in Texas?

Mixed-use is a growing market segment in real estate investment in Texas. Mixed-use center developers consider landscape architecture important to the success of their developments. It is important to invest in landscape architecture within mixed-use center developments to enhance the user experience and to attract and maintain tenants. The extent to which developers

are committed to the success of mixed-use developments/centers over time drives the relative importance of landscape architecture in the eyes of developers. If developers are incentivized to utilize landscape architecture over a short period of time, the extent to which developers perceive value in landscape architecture is limited to the investment horizon of the developer. If the investment horizon is long, developers are more likely to value landscape architecture elements and its contribution to the urban fabric over time. The respective taxonomies, of legacy, merchant builder and aggregate developer are directly linked to investment horizons. Thus, legacy investors seek out landscape architecture as a partner in creating integrating the community and urban fabric. Merchant builders see landscape architecture as a means to an end, or as a commodity to achieve an investment goal over the short-run. Community fabric is not a factor outside of selling the concept to the next buyer. Aggregate developers maintain both a short-term and long-term portfolio of investments that informs a product driven value perspective. Depending on the product type (short-term development or long), aggregate developers will value and heed to the discipline of landscape architecture. However, mixed-use developments/centers maintain a baseline level of requirements to be successful.

In particular, mixed-use developers indicated that landscape architecture was once considered an “afterthought” but is now considered during the pre-development phase of investment. Additionally, mixed-use developers noted that landscape architecture is critical for place making or creating a sense of place within mixed-use development. The concept of place making enriches user and

visitor experiences. Landscape architecture also designs connectivity and flexibility into the space between buildings. Flexibility and connectivity allow mixed-use developers to bridge users with businesses both within and extending into areas surrounding the mixed-use development, the community. In addition, flexibility allows developers to attract differing tenants and to create an environment where changes in tenant mix is seamless. Landscape architecture can also be used as a means to improving the health and wellbeing of users. Interview responses included reference to employee quality of life. Robust landscape architecture is utilized to create a working environment that attracts, retains and respects employees. As noted by one respondent, landscape architecture “bridges business and the city”. It is in this “bridging” that all three domains value landscape architecture as it is the primary vehicle for creating a “sense of place”.

5.2.2 What role does landscape architecture play in creating mixed-use development/centers according to developers?

The in-depth interview process provided insight into the role of landscape architecture in creating value in mixed-use development/centers. In particular, constructivist grounded theory allows for a continuous analysis of responses throughout the respective interview and across interview responses. investment horizon was identified as a domain pertinent to the concept of value as the timeframe during which developers enter and exit an investment is representative of whether they consider elements of mixed-use such as a landscape architecture a valuable to the success of their investment.

The role of landscape architecture plays in creating mixed-use developments/centers includes landscape architecture as partner, commodity and/or product. Legacy developers, as well as, some aggregate developers consider landscape architecture to be a partner in creating user experiences and bridging business and the city. Respondents noted that landscape architecture is a critical component of design as it connects business and users both within and into the adjacent communities. Landscape architecture provides design expertise in place making as it defines place through streetscapes, green space and connectivity. The concept of user experience is a repeated theme of both legacy and aggregate developers when discussing the value of landscape architecture. Landscape architecture is at the "heart' of user experience as the dawn of Internet shopping transforms the product offering of mixed-use developers. Mixed-use developers are "in the business" of providing user experiences that create community – landscape architecture is at the center of creating those experiences.

Merchant builder and some aggregate developers note that landscape architecture provides value in visioning mixed-use development at the pre-development stage. In particular, landscape architecture creates imagery and design concepts at the pre-development stage that allow developers to "sell" their mixed-use concept to investors or funding agents such as banks. This role of landscape architecture represents a commoditization of the discipline. Landscape architecture as commodity is a centered around the developer wants and needs as opposed to the wants and needs of the community. Landscape architecture, whether as a means to design consistent with code requirements or

ensure that appropriate form is affected, serves the purpose of designing a space within acceptable standards to achieve the developers target goals of profitability. It is in this realm landscape architecture is provides the least value to developers. Although landscape architecture provides design services that allow developers to meet city code and zoning requirements, the value of those services was limited because developers did not experience a profitability associated with the associated expenditures merchant builder developers are charged with building, filling and flipping mixed-use developments for profit. Landscape architecture is valuable to attracting investor/lender support and designing an environment that adequately connects users to mixed-use businesses. Merchant builders and, in a certain percentage of their portfolios, aggregate developers do not consider the long term benefits of landscape architecture only the time horizon necessary to offload the mixed-use development to another investor for profit.

Aggregate developers, maintain a portfolio of mixed-use developments that include both legacy and short-term merchant building typologies. Some aggregate developers have a desire to expand their legacy development exposure but lack the liquidity to do so. The merchant builder portion of aggregate developer portfolios provides cash flow and equity accumulation that provide future opportunities for legacy investments if desired. Aggregate developers consider landscape architecture's role as both partner and commodity. For the purpose of this research, collectively, landscape as partner and commodity is considered a product. The term product is used as landscape architecture can be used in many ways depending on the differing and/or complementary roles of experience/place making. Aggregate developers fund

investments personally and with the help of financial institutions and individual investors. The term product is used because it articulates the concept of “off the shelf” service. If aggregate investors are considering a longer term investment that is intended to engage the community over a longer period of time, the value of landscape architecture is greater in that is enhances the economic, environmental and social fabric of the community. In such cases, landscape architecture can positively impact the community beyond the desired profitability of the mixed-use developer. However, if a short term investment or merchant-builder-like investment is affected, the scope of landscape architecture value is limited to the concept of “a means to an end.” The breadth of landscape architecture services affected in the latter scenario, may fail to fully benefit the economic, environmental and social wellbeing of the community as a whole. The value of landscape architecture amongst aggregate developers includes place making, connectivity and creating experiences. Aggregate developers understand the value of landscape architecture in mixed-use developments/centers as they often have a long term or legacy mindset, but are hindered, to a certain extent, by investors who prefer a merchant builder investment horizon (3-5 years).

In summary, the role of landscape architecture is three-fold, partner, commodity and product. Legacy developers are more likely to consider landscape architecture as a partner in creating user experiences in mixed-use developments. Long-term investment horizons represent a commitment of legacy investors to remain a part of the community with the surrounding community. This long-term relationship warrants expertise of landscape

architecture to create a mixed-use environment that connects individuals within and outside the development. Merchant builder developers consider landscape architecture as a commodity. In particular, the concept of creating human experiences is at the center of legacy investor goals. If the human experience is positive, so too will the return on investment to legacy developers and the surrounding community.

Whether it is meeting code requirements or providing a design that attracts tenants, merchant builders tend not to consider the longevity of a project beyond their investment horizon. The short-term investment horizon of merchant builder developers commoditizes landscape architecture as merely a means to market projects for initial funding and mixed-use developments for seed tenants.

Aggregate developers consider landscape architecture as a product offering from which both short-term and merchant builder developments and legacy developments can optimize their return on investment. Aggregate developers actively utilize landscape architecture's connectivity and place making design interventions, however, the extent to which landscape architecture is affected to achieve those goals is dependent on the investment horizon of the respective project. Aggregate developers are similar in how they value landscape architecture in mixed-use developments, however, their utilization of landscape architecture to achieve an ideal human experience, is driven by individual project investment horizon.

In summary, landscape architecture can have many roles depending on the investment goals of mixed-use developers. Considerations of landscape architecture as partner, commodity or product articulate the scope of landscape

architecture's influence on place making and community building within a mixed-use center/developments.

5.2.3 What aspects of landscape architecture are utilized most among developers?

Perceptions of value of landscape architecture are best identified through the utilization of the discipline in the built environment. Place making and the provision of experiences for mixed-use users are aspects of landscape architecture most noted my mixed-use center developers. Mixed-use developers consistently noted the importance of streetscape and connectivity for pedestrian users of mixed-use developments. In particular, developers indicate that code requirements rarely play a significant role in landscape installation, as place making and the need for experiences are not adequately met by city code minimums. Green and open spaces are noted as important elements of mixed-use development due to the flexible nature of the space. Open space within a mixed-use development is important as it provides a flex space that allows for user experiences, community connectivity. Furnishings are minimally noted by interviewees as opposed to intangible aspects of design such as place making and human experience. According to interviewees, place making and experience are achieved through a collective of design elements including pathways, access to green and open space, shade structures or trees, streetscape elements such as monumentation, signage, seating, park space, etc. The respondents' note that the perception of value as it relates to design entails a composition of the

collective elements of landscape architecture into a seamlessly connected forum for human interaction and experience.

5.3 Discussion/Relevance of Landscape Architecture

As noted in the problem statement, “Historically, landscape architecture maintained integral and dynamic relationships to a variety of pursuits, from painting to sewerage (from the arts to mechanical engineering). These relationships were not static or one-way streets; rather they included an exchange of information that allowed the fields to dynamically play off each other, to evolve and expand...The relationship of landscape architecture to its allied professions is today parasitic rather than mutualistic” (Hohmann & Langhorst, 2004, pg. 2).

The rapid growth in urban density and the profitability associated with growth drives urban design. Landscape architecture is the craftsman of urban design through the creation of “the space between.” The implications of this research represent a divergence of influence in the profession. Landscape architecture can continue on the path it follows, picking up design commissions to appease mixed-use developer investment goals ,or it can reaffirm its position as a steward of the human experience providing a “mutualistic” goal of creating environmentally sensitive value for all stakeholders, mixed-use developers, public agents and users or citizenry.

The research provides insight into the differing incentives and drivers of mixed-use development in Texas. Simplistically, government or public agents seek tax revenue, mixed-use developers seek investment revenue through the

transactional sale of investments (exchange value) or through rental income while users seek an environment that provides for their socio-economic needs. Landscape architecture is uniquely positioned to be a mediator of priorities through design. This research provides insight into the value of landscape architecture as a perception of mixed-use developers. In particular, the research provides landscape architects with an understanding of how mixed-use developers prioritize user needs depending on their investment horizon. By understanding mixed-use developer goals and investment horizons, landscape architects can advocate for designs that both meet the developer goals and so too, the goals of public agents and users. Landscape architecture can move away from serving developers for profit and create a discourse of value that transcends transactional investment strategies to include environmental, economic, and social benefits to society.

5.4 Future Research Opportunities

Future research opportunities exist in expanding the research interview process to include an extended list of developers beyond mixed-use center developers. Additionally, differing mixed-use typologies and other landscape architecture intensive investments such as master planned communities provide opportunities for learning. Landscape architecture's ability to understand the goals and incentive structure of its client base allow landscape architecture to develop design solutions that meet the needs of its client base but so too expand the design offering to benefit the users of space and the environment as a whole. A reactionary design created to meet client investment incentives alone fails to

create a space that connects people to place and represents the “parasitic” concept described by Hohmann, & Langhorst (Hohmann, & Langhorst, 2004, pg. 2).

Future research opportunities exist in the context of how landscape architecture understands incentives of allied professions and their respective user base. Allied professions are part of the team of development. Whether it is architects, engineers, governments, developers or environmentalist, landscape architecture can explore the respective goals and incentives of the allied professions to better understand how landscape architecture can meet the needs of these professionals and to move the goals of these professions to include that of the surrounding community. Advocacy for the user experience across all allied professions enrich the design process as opposed to undermine it.

In addition to allied professions, landscape architecture can also benefit from further exploration of those whom developers or other allied professions must serve. For example, in-depth interviews elicited mixed-use developer references to groups or individuals who they perceive as the primary users of their developments, renters. Renters provide income to developers and a platform in which visitors engage with each other and the environment. Future research of the wants and needs of renters will allow landscape architecture to understand how the designed space impacts the business models of mixed-use development renters. From simple retail renters to complex corporations, understanding human experiences will inform future design. Of particular note was R7, referenced the inclusion of human resource professionals as a contributor to his understanding of what his renters want. R7’s reference to

human resources is a reference to human centered design and, perhaps, an unwitting, confirmation that landscape architecture creates value by affecting design through a greater understanding of the social sciences – the study of the human experience.

Outside of the scope of qualitative research, quantitative research opportunities exist in furthering knowledge in the value of landscape architecture to mixed-use developers in Texas and beyond. GIS, real estate valuation information and income/tax revenue data can be analyzed to establish baseline and subsequent changes in valuation of mixed-use developments and development impacts on adjacent communities. An understanding of changes in rents, retail and service revenue will inform the discipline of landscape architecture on tangible value impacts of design. An understanding of how design impacts the fiscal performance of mixed-use developments/centers will allow landscape architecture to harness financial success to achieve design interventions that better society from a socio-environmental perspective. Knowledge of both financial and ecological benefits of landscape architecture will position landscape architecture to steward the urban fabric for the greater good. In the words of the Landscape Declaration, “As landscape architects we vow to create places that serve the higher purpose of social and ecological justice for all peoples and all species. We vow to create places that nourish our deepest needs for communion with the natural world and with one another. We vow to serve the health and wellbeing of all communities (LAF, 2016, pg. 1).

Appendix A

University of Texas at Arlington IRB Requirement Documents

THE UNIVERSITY OF TEXAS AT ARLINGTON
INSTITUTIONAL REVIEW BOARD (IRB) FOR THE PROTECTION OF HUMAN SUBJECTS

IRB FORM #1A: PROPOSAL FOR EXEMPT RESEARCH INVOLVING HUMAN SUBJECTS

Faculty, staff, students, or employees who propose to engage in any research, research development, testing or evaluation with human subjects must have review and approval of that activity by the Institutional Review Board (IRB) prior to initiation of that project. The IRB is responsible for safeguarding the rights and welfare of subjects who participate in research activities. If you require further assistance in completing this form or need additional information, please contact Regulatory Services at 817-272-3723.

SECTION A: GENERAL INFORMATION

1. **Non-UTA Protocol Personnel:** *Enter all individuals that are NOT affiliated with UT Arlington who will interact or intervene with the human subjects for the research study OR who will access identifiable subject data. UTA affiliated personnel should be listed on #3 of the protocol page in the electronic submission system (Profiles).*

   ***In the electronic submission system, upload a completed Non-UTA Collaborator Form and Human Subject Protection training for each listed Non-UTA individual.*

Name:	**Organization:**

2. **Expected Start Date:** Upon IRB Approval *(You are not authorized to start any research on human subjects including subject recruitment until the IRB has approved the research protocol.)*

3. **Expected Completion Date:** 12/31/2019

SECTION B: FUNDING

4. **Is the study funded?** ☐ **Yes** **X No** ☐ **Pending** **If yes, indicate the funding source(s) below.**

   External: ☐ **FEDERAL (Specify Sponsor:)** ☐ **State (Specify Sponsor:)**

   ☐ **INDUSTRY SPONSORED (Specify Sponsor:)**

   Grants & Contracts Bluesheet Number from Mentis:

   Internal: ☐ **UTA Departmental Account** ☐ **Researcher's Personal Funds** ☐ **Other:**

SECTION C: EXEMPT CATEGORY SELECTION

5. **Choose the exempt category(s) that apply to your research study below. If your study involves procedures that do not fit into any of the below eight categories (or a combination of these categories), then your project cannot qualify for exempt review.**

   ☐ **Exempt 1: Normal Educational Practices.** ***Research conducted in established or commonly accepted educational settings*** *(children or adults) that specifically involves normal educational practices that are* ***not likely to adversely impact*** *students' opportunity to learn required educational content* ***or*** *the assessment of educators who provide instruction. This includes most research on regular and special*

education instructional strategies, and research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.

X **Exempt 2: Educational Tests, Surveys, Interviews, Observations of Public Behavior.** *Research involving **educational tests** (cognitive, diagnostic, aptitude, achievement), **survey** procedures, **interview** procedures, or **observation of public behavior** (including visual or auditory recording) if at least one of the following criteria is met:*

X (i*) Unidentifiable/Anonymous: *Information obtained will be **recorded** in such a manner that subjects' **identity cannot readily be ascertained**, either directly or indirectly through identifiers linked to the subjects (**note**: research involving a coding mechanism that links to identifiable data does not fit under this option);*

(ii*) Non-Sensitive: *Any disclosure of the subjects' responses outside the research **would not reasonably place them at risk** of criminal or civil liability or be damaging to their financial standing, employability, educational advancement, or reputation;*

☐ **(iii) Identifiable + Sensitive, with Privacy/Confidentiality Plan:** *Information obtained will be recorded by the investigator in such a manner that the subjects' **identity can readily be ascertained**, either directly or indirectly through identifiers (such as coding) linked to the subjects, **and the data collected/subjects' responses may be sensitive in nature**. To qualify for this option, you must implement adequate provisions to protect the privacy of subjects and maintain the confidentiality of data collected. The IRB will be required to conduct a **Limited Review of your Privacy/Confidentiality Plan**.*

***Research under Exempt 2 i or ii (not iii) may include children if limited to 1) educational tests or 2) the observation of public behavior when the investigator(s) do not participate in the activities being observed. Surveys and interviews with children are not allowable under Exempt 2 but may qualify for Exempt 1 if all other conditions of that exemption are met.*

☐ **Exempt 3: Benign Behavioral Interventions.** *Research involving **benign behavioral interventions**) with the collection of information from an **adult subject** through **verbal or written responses (including data entry) or audiovisual recording** if the subject prospectively agrees to the intervention/information collection and at least one of the following criteria is met*

☐ **(i) Unidentifiable/Anonymous:** *Information obtained will be **recorded** in such a manner that subjects' **identity cannot readily be ascertained**, either directly or indirectly through identifiers linked to the subjects (**note**: research involving a coding mechanism that links to identifiable data does not fit under this option);*

☐ **(ii) Non-Sensitive:** *Any disclosure of the subjects' responses outside the research **would not reasonably place them at risk** of criminal or civil liability or be damaging to their financial standing, employability, educational advancement, or reputation;*

☐ **(iii) Identifiable + Sensitive, with Privacy/Confidentiality Plan:** *Information obtained will be recorded by the investigator in such a manner that the subjects' **identity can readily be ascertained**, either directly or indirectly through identifiers (such as coding) linked to the subjects, **and the data collected/subjects' responses may be sensitive in nature**. To qualify for this option, you must implement adequate provisions to protect the privacy of subjects and maintain the confidentiality of data collected. The IRB will be required to conduct a **Limited Review of your Privacy/Confidentiality Plan**.*

"Benign Behavioral Intervention" is defined as: brief in duration, harmless, painless, not

physically invasive, not likely to have a significant adverse lasting impact, and not likely to be offensive or embarrassing. Examples: playing an online game, solving puzzles under various noise conditions, deciding how to allocate a nominal amount of cash between themselves and someone else. Deception is not allowable under this exemption unless the subject is informed prior to agreeing to participate that they will be unaware of or misled regarding the nature or purposes of the research.

☐ **Exempt 4: Secondary Research.** ***Secondary research uses of identifiable private information or identifiable biospecimens*** *that have been or will be collected, if at least one of the following criteria is met:*

☐ **(i)** *The identifiable private information or identifiable biospecimens are* ***publicly available****;*

☐ **(ii)** *Information obtained will be* ***recorded*** *in such a manner that subjects'* ***identity cannot readily be ascertained****, either directly or indirectly through identifiers linked to the subjects,* ***and*** *the investigator* ***will not contact or re-identify*** *the subjects (****note****: if investigators will maintain a coding mechanism that links to identifiable data, research does not fit under this option);*

☐ **(iii)** *Research involves receipt/use of protected health information ("PHI") provided by a HIPAA "covered entity" as defined under the Health Insurance Portability and Accountability Act ("HIPAA") Rules,* ***if the PHI is in the form of a "limited data set" and covered by a Data Use Agreement*** *between the provider and UTA.*

☐ **(iv)** *The secondary research activity is* ***conducted by or on behalf of a federal entity*** *and involves the use of federally generated nonresearch information, provided the original collection was subject to specific federal privacy protections and continues to be protected.*

"Secondary research" is defined as: re-use of identifiable information or biospecimens that were/will be collected for some other primary/initial purpose or activity (research or non-research). Examples: use of information from a databank or records, use of biospecimens from a pathology laboratory, use of "excess" portion of blood that was drawn for clinical purposes. If unable to meet one of the criteria for Exempt 4, please see Exempt 8 for an additional option for secondary research. ***Note****: when information/biospecimens are or will be de-identified before you receive/collect them and you will not have access to direct/indirect identifying information, this does not constitute human subject research (under the federal definition), and IRB review is not required.*

☐ **Exempt 5: Public Benefit or Service Programs.** *Research and demonstration* ***projects conducted or supported by a Federal department or agency*** *designed to study, evaluate, improve, or otherwise* ***examine public benefit or service programs****. Such projects may include internal studies by Federal employees, and studies under contracts or consulting arrangements, cooperative agreements, or grants.*

☐ **Exempt 6: Taste and food quality evaluation and consumer acceptance studies.** *(i) If wholesome foods without additives are consumed, or (ii) If a food is consumed that contains a food ingredient at or below the level and for a use found to be safe, or agricultural chemical or environmental contaminant at or below the level found to be safe, by the FDA or approved by the EPA or the Food Safety and Inspection Service of the USDA.*

☐ **Exempt 7: Storage or Maintenance of Identifiable Private Information or Biospecimens for Potential Secondary Research Use.** *To be eligible,* ***broad consent must be obtained*** *from subjects, and the IRB*

physically invasive, not likely to have a significant adverse lasting impact, and not likely to be offensive or embarrassing. Examples: playing an online game, solving puzzles under various noise conditions, deciding how to allocate a nominal amount of cash between themselves and someone else. Deception is not allowable under this exemption unless the subject is informed prior to agreeing to participate that they will be unaware of or misled regarding the nature or purposes of the research.

☐ **Exempt 4: Secondary Research.** ***Secondary research uses of identifiable private information or identifiable biospecimens*** *that have been or will be collected, if at least one of the following criteria is met:*

☐ **(i)** *The identifiable private information or identifiable biospecimens are* ***publicly available****;*

☐ **(ii)** *Information obtained will be* ***recorded*** *in such a manner that subjects'* ***identity cannot readily be ascertained****, either directly or indirectly through identifiers linked to the subjects,* ***and*** *the investigator* ***will not contact or re-identify*** *the subjects (****note****: if investigators will maintain a coding mechanism that links to identifiable data, research does not fit under this option);*

☐ **(iii)** *Research involves receipt/use of protected health information ("PHI") provided by a HIPAA "covered entity" as defined under the Health Insurance Portability and Accountability Act ("HIPAA") Rules,* ***if the PHI is in the form of a "limited data set" and covered by a Data Use Agreement*** *between the provider and UTA.*

☐ **(iv)** *The secondary research activity is* ***conducted by or on behalf of a federal entity*** *and involves the use of federally generated nonresearch information, provided the original collection was subject to specific federal privacy protections and continues to be protected.*

"Secondary research" is defined as: re-use of identifiable information or biospecimens that were/will be collected for some other primary/initial purpose or activity (research or non-research). Examples: use of information from a databank or records, use of biospecimens from a pathology laboratory, use of "excess" portion of blood that was drawn for clinical purposes. If unable to meet one of the criteria for Exempt 4, please see Exempt 8 for an additional option for secondary research. ***Note****: when information/biospecimens are or will be de-identified before you receive/collect them and you will not have access to direct/indirect identifying information, this does not constitute human subject research (under the federal definition), and IRB review is not required.*

☐ **Exempt 5: Public Benefit or Service Programs.** *Research and demonstration* ***projects conducted or supported by a Federal department or agency*** *designed to study, evaluate, improve, or otherwise* ***examine public benefit or service programs****. Such projects may include internal studies by Federal employees, and studies under contracts or consulting arrangements, cooperative agreements, or grants.*

☐ **Exempt 6: Taste and food quality evaluation and consumer acceptance studies.** *(i) If wholesome foods without additives are consumed, or (ii) If a food is consumed that contains a food ingredient at or below the level and for a use found to be safe, or agricultural chemical or environmental contaminant at or below the level found to be safe, by the FDA or approved by the EPA or the Food Safety and Inspection Service of the USDA.*

☐ **Exempt 7: Storage or Maintenance of Identifiable Private Information or Biospecimens for Potential Secondary Research Use.** *To be eligible,* ***broad consent must be obtained*** *from subjects, and the IRB*

*will be required to conduct a **Limited Review of the broad consent document and the process** for obtaining and tracking broad consent.*

☐ **Exempt 8: Use of Identifiable Private Information or Biospecimens for Secondary Research.**
*Research is eligible if: 1) **broad consent was obtained** from subjects for the storage, maintenance, and secondary research use, 2) informed consent was documented (or documentation was waived), **and** 3) return of individual research results is not included in the study plan. The IRB will be required to conduct a **Limited Review** of your **Privacy/Confidentiality Plan**, and to verify that the research is **within the scope of the broad consent** obtained from subjects.*

***Note**: See Exempt 4 for an additional option for secondary research. If unable to meet the criteria for Exempt 4 (for example, it is not publicly available and identifiers need to be maintained), Exempt 8 can be an option, if you are able to determine and provide documentation that broad consent was obtained. Secondary research under this exemption would generally be conducted with the information or biospecimens stored and maintained under Exempt 7.*

SECTION D: STUDY RATIONALE, PROCEDURES, & SITES

6. Rationale:
The purpose of this research is to understand if developers , real estate builder/investors of mixed-use centers, perceive landscape architecture to be a valuable component of mixed-use developments in Texas and to understand how such perceptions add value to their respective investment strategies. Research results provide landscape architecture practitioners and students with data on the economic drivers impacting landscape architecture investment decisions of the mixed-use center development community.

The research intends to answer the following research questions:
What are the economic drivers in creating Mixed-use Centers in North Texas?
What role does landscape architecture play in creating successful mixed-use centers according to developers?
What aspects of landscape architecture are utilized the most amongst developers to affect successful mixed-use centers?

7. Procedures: *Describe the step-by-step procedures that will be used to answer the research questions from #6. Include details on all methods that will be used to collect human subject data from the beginning to the end of the study, such as what data will be collected (and whether data may be individually identifiable); when and where the data will be collected; and the data collection instruments that will be used.*
The research involves qualitative research methods to understand developers' professional perception of the value of landscape architecture in mixed-use development centers in North Texas.

- The study participants, or human subjects, utilized for this study are chosen through convenience sampling of development companies from different mixed-use developments in North Texas. For data collection purposes, the researcher will recruit participants through online methods (via email), though phone inquiry and by inter-personal networking with developers. Snowball technique will also be utilized to recruit subjects.

  The researcher will request a person-to-person interview with the subjects or where necessary conduct phone interviews. Mixed-use development typologies narrows the sampling to developers involved in mixed-use development centers. Mixed-use development center investment values are not delineated for the purpose of this study such that the researcher can obtain insight from a diversity of large, medium and small capitalization project developers.

In addition to select sampling, the researcher employed "snowball" sampling (Taylor, 1998, pg.7) to recruit additional participants who invest in mixed-use centers in North Texas. "Snowball" sampling is a sampling method that identifies supplemental study participants through existing participant referrals;
- Study participants will be asked to participate in an interview by the researcher. The researcher will request a person-to-person interview with the subjects or where necessary conduct phone interview at the request of the interview subject. Mixed-use development typologies narrows the sampling to developers involved in mixed-use development centers. Mixed-use development center investment values are not delineated for the purpose of this study such that the researcher can obtain insight from a diversity of large, medium and small capitalization project developers.

In addition to select sampling, the researcher employed "snowball" sampling (Taylor, 1998, pg.7) to recruit additional participants who invest in mixed-use centers in North Texas. "Snowball" sampling is a sampling method that identifies supplemental study participants through existing participant referrals; may include email, written letter and/or phone correspondence (see attached);

- Study participants will receive an Informed Concept Form prior to conducting the interview;
- Interview responses will be recorded for the purpose of accurate transcription. Recordings will be destroyed after transcriptions are complete and transcriptions will remain at UTA for up to three (3) years. At no time will the transcribed information be used for research beyond that which is communicated through the informed consent document. Transcriptions will be stored in the office of Dr. Taner Ozdil , CAPPA #417;

In addition to person-to-person interviews, passive observation of mixed-use development centers will be conducted. Passive observations will provide background information on the developments created by the research participants. Observations will be for reference purposes. No interaction with mixed-use center site visitors, workers or others, is needed to affect the passive observation. Some sites may be documented with sketches or photos for illustration purposes and researcher will made every attempt to keep humans unidentifiable if they are not in public realm.

8. Location(s) and Site(s):

A recruitment letter will be sent to interview prospects via email (see attached). Recruited participants will be interviewed in their respective firm offices. If a subject cannot be interviewed at their worksite, an agreeable alternative site will be agreed upon or a phone interview is conducted. Research site include but is not limited to mixed-use developments in North Texas and the offices or chosen meeting locations of mixed-use developers in Texas.

In the case of person-to-person interviews, and the recruitment of subjects via snowballing technique, a modified recruitment letter will be sent to interview prospects (see attached).

SECTION E: POPULATION & ENROLLMENT

9. Inclusion & Exclusion Criteria:

Inclusion in the research study requires the following:
- Participant is a developer of mixed-use centers in Texas;
- Participants must be willing to participate in the research study interview process;
- Mixed-use developments must include elements designed by landscape architects;

Exclusion in the research study results from the following;
- Participants are to be 18 years old or older;
- Mixed-use developments of participants are outside Texas;

10. **Number of Subjects:**
    30 participants

11. **Subject Recruitment:** Direct Person-to-Person Recruitment; Email; Telephone Script; "snowball sampling" is utilized to identify research participants. Initial contact information will be obtained through faculty and personal friends who support or work in the mixed-use center development business.

12. **Compensation:** There is no compensation for participation in this research study. However, participants, who show further interest, will be made aware of the final results so that they can have access to findings of this research.

SECTION F: INFORMED CONSENT

13. **Informed Consent, Broad Consent, & Assent:** Consent will be obtained before the interview, verbally or via the informed consent document, if preferable to the participant.

14. **Incomplete Disclosure / Deception:**
    N/A

SECTION G: PRIVACY & CONFIDENTIALITY

15. **Privacy**
    Interviews can be conducted at a location of the participants discretion.

16. **Confidentiality & Data Security:**
    Transcriptions data and Recordings of interviews will be stored in a UTA Box Account.

SECTION H: REQUIRED ADDITIONAL ATTACHMENTS

17. **Upload finalized versions of the following documents as applicable to your study in the electronic submission system underneath #5, Form Attachments***:*

    - Interview questions / prompts
    - Passive Observation data collection sheet
    - All recruitment materials including flyers, ads, scripts, emails, social media posts, etc.
    - Informed Consent Documents / cover letters

UT Arlington
Informed Consent Document

PRINCIPAL INVESTIGATOR
Ann Bridget Podeszwa,
Master of Landscape Architecture Candidate, College of Architecture, Planning and Public Affairs
University of Texas at Arlington
Arlington Texas
Ann.podeszwa@mavs.uta.edu
214-797-3855
FACULTY ADVISOR
Dr. Taner Ozdil;
Associate Professor, College of Architecture, Planning and Public Affairs
University of Texas at Arlington
Box 19108 1225 West Mitchell
Arlington Texas
tozdil@uta.edu
817-272-5089

TITLE OF PROJECT
The Economics of Landscapes: Why Invest in Landscape Architecture in Mixed-use Developments in North Texas?

INTRODUCTION
You are being asked to participate in a research study about the value of landscape architecture in mixed-use centers from the developer's perspective.

Your participation in this study is voluntary. Refusal to participate or discontinuing your participation at any time will involve no penalty or loss of benefits to which you are otherwise entitled. Please ask questions if there is anything you do not understand.

PURPOSE
The purpose of the study is to inform students, faculty and landscape architecture practitioners if developers perceive landscape architecture to be a valuable component of mixed-use developments in North Texas and how such perceptions add value to developer investment strategies.

DURATION
Participation in this study will last approximately 30 minutes. Subsequent clarification of interview questions may request a follow-up inquiry that will entail no more than 15 minutes. Follow-up is not anticipated at this time.

IRB Approval Date:

IRB Expiration Date:

UT Arlington
Informed Consent Document

NUMBER OF PARTICIPANTS
The anticipated number of participants in this study is 30 participants.

PROCEDURES
The procedures that will involve you as a research participant include:

1. Participation in an in-person or phone interview;
2. Participation in post- interview follow-up if clarification of your interview response is requested (not anticipated);

Audio recordings of the interview will be conducted to create an accurate record of your response. After the interview, the audio recording will be transcribed, which means it will be typed exactly as recorded, word-for-word, by the researcher. The interview recording and transcription will be stored in a UTA BOX, or secure cloud based storage provided by the university to the researcher.

POSSIBLE BENEFITS
Results of the survey will guide students, faculty and landscape architects on how they can serve the mixed-use development community more effectively.

POSSIBLE RISKS/DISCOMFORTS
There are no perceived risks or discomforts for participating in this research study. Should you experience any discomfort please inform the researcher, you have the right to quit any study procedures at any time at no consequence.

COMPENSATION
No compensation is offered for participation in this research study.

ALTERNATIVE PROCEDURES
There are no alternative procedures offered for this study. However, you can elect not to participate in the study or quit at any time at no consequence.

VOLUNTARY PARTICIPATION
Participation in this research study is voluntary. You have the right to decline participation in any or all study procedures or quit at any time at no consequence.

CONFIDENTIALITY
Every attempt will be made to see that your study results are kept confidential. A copy of this signed consent form and all data collected, including transcriptions of audio recordings from this study will be stored in a UTA BoxThe results of this study may be published and/or presented at meetings without naming you as a participant. Additional research studies could evolve from the information you have provided, but your

IRB Approval Date:

IRB Expiration Date:

information will not be linked to you in anyway; it will be anonymous. Although your rights and privacy will be maintained, the Secretary of the Department of Health and Human Services, the UTA Institutional Review Board (IRB), and personnel particular to this research have access to the study records. Your records will be kept completely confidential according to current legal requirements. They will not be revealed unless required by law, or as noted above. The IRB at UTA has reviewed and approved this study and the information within this consent form. If in the unlikely event it becomes necessary for the Institutional Review Board to review your research records, the University of Texas at Arlington will protect the confidentiality of those records to the extent permitted by law.

CONTACT FOR QUESTIONS
Questions about this research study may be directed to Ann Podeszwa at ann.podeszwa@mavs.uta.edu or (214)797-3855 or Dr. Taner Ozdil, Associate Professor of Landscape Architecture, tozdil@uta.edu , (817)-272-5089. Any questions you may have about your rights as a research participant or a research-related injury may be directed to the Office of Research Administration; Regulatory Services at 817-272-2105 or regulatoryservices@uta.edu.

As a representative of this study, I have explained the purpose, the procedures, the benefits, and the risks that are involved in this research study:

_____
Signature and printed name of principal investigator or person obtaining consent **Date**

CONSENT
By signing below, you confirm that you are 18 years of age or older and have read or had this document read to you. You have been informed about this study's purpose, procedures, possible benefits and risks, and you have received a copy of this form. You have been given the opportunity to ask questions before you sign, and you have been told that you can ask other questions at any time.

You voluntarily agree to participate in this study. By signing this form, you are not waiving any of your legal rights. Refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled. You may discontinue participation at any time without penalty or loss of benefits, to which you are otherwise entitled.

_____
SIGNATURE OF VOLUNTEER **DATE**

IRB Approval Date:

IRB Expiration Date:

October 15, 2018

Ann Podeszwa
Dr. Taner Ozdil
School of Architecture
The University of Texas at Arlington
Box 19108

Protocol Number: 2019-0011
Protocol Title: *"The Economics Of Landscapes: Why Invest in Landscape Architecture in Mixed-Use Developments in Texas"*

APPROVAL OF MINIMAL RISK HUMAN SUBJECTS RESEARCH WITHOUT FEDERAL FUNDING

The University of Texas Arlington Institutional Review Board (UTA IRB) or designee has reviewed your protocol and made the determination that this research study involving human subjects is approved in accordance with UT Arlington's Standard Operating Procedures (SOPs) for minimal risk research. You are therefore authorized to begin the research as of **October 13, 2018**.

Note that this project is not covered by UTA's Federalwide Assurance (FWA) and the researcher has indicated it will not receive federal funding. You must inform Regulatory Services immediately if the project may or will receive federal funding in the future, as this will require that the protocol be re-reviewed in accordance with the federal regulations for the protection of human subjects.

As Principal Investigator of this IRB approved study, the following items are your responsibility throughout the life of the study:

UNANTICIPATED ADVERSE EVENTS
Please be advised that as the Principal Investigator, you are required to report local adverse (unanticipated) events to The UT Arlington Office of Research Administration; Regulatory Services within 24 hours of the occurrence or upon acknowledgement of the occurrence.

INFORMED CONSENT DOCUMENT
The IRB approved version of the informed consent document (ICD) must be used when prospectively enrolling volunteer participants into the study. Unless otherwise determined by the IRB, all signed consent forms must be securely maintained on the UT Arlington campus for the duration of the study plus a minimum of three years after the completion of all study procedures (including data analysis). The complete study record is subject to inspection and/or audit during this time period by entities including but not limited to the UT Arlington IRB, Regulatory Services staff, OHRP, FDA, and by study sponsors (as applicable).

MODIFICATIONS TO THE APPROVED PROTOCOL
All proposed changes must be submitted via the electronic submission system and approved prior to implementation, except when necessary to eliminate apparent immediate hazards to the subject. Modifications include but are not limited to: Changes in protocol personnel, changes in proposed study procedures, and/or updates to data collection instruments. Failure to obtain prior approval for modifications is considered an issue of non-compliance and will be subject to review and deliberation by the IRB which could result in the suspension/termination of the protocol.

ANNUAL CHECK-IN EMAIL / STUDY CLOSURE
Although annual continuing review is not required for this study, you will receive an email around the anniversary date of your initial approval date to remind you of these responsibilities. Please notify Regulatory Services once your study is completed to begin the required 3-year research record retention period.

HUMAN SUBJECTS TRAINING
All investigators and personnel identified in the protocol must have documented Human Subjects Protection (HSP) training on file prior to study approval. HSP completion certificates are valid for 3 years from completion date; the PI is responsible for ensuring that study personnel maintain all appropriate training(s) for the duration of the study.

CONTACT FOR QUESTIONS
The UT Arlington Office of Research Administration; Regulatory Services appreciates your continuing commitment to the protection of human research subjects. Should you have questions or require further assistance, please contact Regulatory Services at regulatoryservices@uta.edu or 817-272-3723.

Protocol Summary

"*The Economics Of Landscapes: Why Invest In Landscape Architecture In Mixed-Use Developments/Centers In North Texas."* The purpose of this research is to understand the value mixed-use center developers place on landscape architecture at the pre-development stage.

The concept of value or the value equation is explored in contemporary real estate investment and landscape architecture studies. Little research bridges value considerations of mixed-use developers with that of landscape architecture professionals. This research will enhance landscape architecture's understanding of priorities of mixed-use center developers and provide insight into how landscape architecture can enhance design.

In order to understand the concept of "value" in landscape in mixed-use development centers from the developer's perspective, the researcher will conduct person-to-person interviews. The process will occur in the following steps;

1. Participants will be recruited from a snowball method through phone calls, e-mails, or personal networking;
2. A summary of the thesis abstract will be provided as a method of informing potential participants of the purpose and scope of research;
3. Interviewees or research subjects will be asked profile questions of their firm, and interview questions face-to face, by phone (depending on the preference of the participant).

Research subjects are going to be asked to participate in a research study about the value of landscape architecture in mixed-use development centers in Texas. They are being selected because of their development expertise in mixed-use development centers in Texas. Their participation is voluntary. Their refusal to participate or discontinuation of participation at any time will involve no penalty or lose of benefits to which they are otherwise entitled. No benefit or monetary or other form of compensation is utilized for the purpose of this research. The participants are free to ask questions of there is anything they do not understand or requires explanation.

Passive observations of mixed-use center sites will occur for those sites affected by interviewed developers. the observations will not involve person-to-person contact. Some sites will be documented with sketches or photos for illustration purposes and researcher will make every attempt to keep humans unidentifiable if they are not in public realm.

To:

From: ann.podeszwa@mavs.uta.edu

Subject: The Value of Landscape Architecture: A Developer's Perception

Dear Mixed-use Developer:

I am a graduate student at the University of Texas at Arlington writing my Master of Landscape Architecture thesis, "*The Economics Of Landscapes: Why Invest In Landscape Architecture In Mixed-Use Developments/Centers In Texas.*" The purpose of my research is to understand the value mixed-use center developers place on landscape architecture at all stages of development - pre-development, during development and post-development.

The concept of value or the value equation is explored in contemporary real estate investment and landscape architecture studies. Little research bridges pre-development value considerations of mixed-use developers with that of landscape architecture professionals. This research will enhance landscape architecture's understanding of pre-development priorities of mixed-use center developers and provide insight into how landscape architecture can enhance design at the project development stage.

I am requesting your participation in this research through an in-person or phone interview. The interview will take approximately 30 minutes of your time. As a mixed-use center developer in North Texas, you are an ideal candidate to provide insight into the value of landscape architecture at the pre-development stage. The information you provide will be kept strictly confidential. Specific interview responses will be visible to Dr. Taner Ozdil, thesis committee members, and me. No identifying information will be published without prior written consent from you as the interview respondent.

Upon your voluntary agreement to participate in this thesis project, I will contact you to establish a mutually agreeable meeting time. Thank you for your time and consideration. I would appreciate your informing me of your willingness to participate in this project via the contact information provided below. I appreciate your time and consideration.

Kind regards,

Ann Podeszwa, MLA Candidate
The University of Texas at Arlington
Ann.podeszwa@mavs.uta.edu
214-797-3855

Alternative Recruitment Script

Phone greeting to a prospective interview candidate:

Hello is this (prospective subject name here)? I hope this call finds you well.

My name is Ann Podeszwa, a Master of Landscape Architecture Candidate at the University of Texas at Arlington. I received your contact information through (add contact name here, if needed) as a potential participant in a research study. I am seeking out mixed-use center developers working in North Texas for potential interviews to fulfill my thesis requirement for my MLA degree.

(Prospective interviewee may interceded with response, question or statement).

My thesis is titled, "*The Economics Of Landscapes: Why Invest In Landscape Architecture In Mixed-Use Developments/Centers In North Texas.*" The purpose of my research is to understand the value mixed-use center developers place on landscape architecture at the pre-development stage.

The concept of value or the value equation is explored in contemporary real estate investment and landscape architecture studies. Little research bridges development value considerations of mixed-use developers with that of landscape architecture professionals. This research will enhance landscape architecture's understanding of priorities of mixed-use center developers and provide insight into how landscape architecture can enhance design at the project development stage.

I am requesting your participation in this research through an in-person or phone interview. The interview will take approximately 30 minutes of your time. As a mixed-use center developer in North Texas, you are an ideal candidate to provide insight into the value of landscape architecture at the pre-development stage. The information you provide will be kept strictly confidential. Specific interview responses will be visible to Dr. Taner Ozdil, thesis committee members, and me. No identifying information will be published without prior written consent from you as the interview respondent.

Would you be interested in participating in this study?

Looking forward for your response,
Thank you for your consideration.

Signature….

Alternative Recruitment Script

Phone greeting to a prospective interview candidate:

Hello is this (prospective subject name here)? I hope this call finds you well.

My name is Ann Podeszwa, a Master of Landscape Architecture Candidate at the University of Texas at Arlington. I received your contact information through (add contact name here, if needed) as a potential participant in a research study. I am seeking out mixed-use center developers working in North Texas for potential interviews to fulfill my thesis requirement for my MLA degree.

(Prospective interviewee may interceded with response, question or statement).

My thesis is titled, "*The Economics Of Landscapes: Why Invest In Landscape Architecture In Mixed-Use Developments/Centers In North Texas.*" The purpose of my research is to understand the value mixed-use center developers place on landscape architecture at the pre-development stage.

The concept of value or the value equation is explored in contemporary real estate investment and landscape architecture studies. Little research bridges development value considerations of mixed-use developers with that of landscape architecture professionals. This research will enhance landscape architecture's understanding of priorities of mixed-use center developers and provide insight into how landscape architecture can enhance design at the project development stage.

I am requesting your participation in this research through an in-person or phone interview. The interview will take approximately 30 minutes of your time. As a mixed-use center developer in North Texas, you are an ideal candidate to provide insight into the value of landscape architecture at the pre-development stage. The information you provide will be kept strictly confidential. Specific interview responses will be visible to Dr. Taner Ozdil, thesis committee members, and me. No identifying information will be published without prior written consent from you as the interview respondent.

Would you be interested in participating in this study?

Looking forward for your response,
Thank you for your consideration.

Signature….

Alternative Recruitment Script

If response is “yes” (or other affirmative statement), I would request the preferred interview method, phone or in-person. An interview time and place is set-up, as well as, an explanation of the informed consent process noted. I would then thank them for their time, consideration and support of my research project.

If the response is “no” (or other negative response), I would ask if they knew of an alternative respondent who may be agreeable to interview on the subject noted. I would then thank them for their time and consideration.

Post Interview Script:

Upon completion of the interview, the final question would be:

“Is there additional insight you would like to provide on the topic before we end the interview?”

After their response, I would thank them for their time and support of my research. I would also inquire as to whether or not they could suggest additional respondents who could enhance the research and who might be interested in participating in the study. If the respondent, provides contact names and contact information for potential interview candidates, I would request permission to identify the respondent as a referral source for the respective interview candidate.

Informal Interview Request

The **informal interview request** would be used in situations, when prospective research participants are encountered in social situations where interaction with the prospective participant was otherwise unforeseen.

I am a grad student at the University of Texas at Arlington studying for my Master of Landscape Architecture. I am not sure if you knew?

I am in the process of writing my thesis for which I am actively conducting research. In light of our conversation, I was wondering if you might be interested in participating in my research study?

My thesis is entitled, The Economics of Landscapes: Why Invest in Landscape Architecture in Mixed-use Developments/Centers in Texas. The purpose of my research is to understand the value mixed-use center developers place on landscape architecture at all stages of development – pre-development, during development and post development.

If you are interested, can I get your business card or contact information such that I can follow-up with a formal email? I would love to set up a time to meet with you – time and location at your discretion. I would anticipate needing about 30 minutes of your time for an interview.

Also, please know that your identity and that of your company would be strictly confidential. Specific interview responses will be visible to Dr. Taner Ozdil, thesis committee members and me.

If respondent says no thank you:
I understand. Thanks for you time!

If respondent says yes:
Great.

Thank you… I will touch base with you within the next week to schedule a time to meet.

Have a great (day/evening)!

Appendix B

Interview Questions

The Economics of Landscapes: Why Invest in Landscape Architecture in Mixed-use Development/Centers in Texas?

Interview Questions/Methods data

Research Questions

The overarching research questions investigated within this thesis on mixed-use development/centers in Texas are;

The Economics of Landscape: Why do developers invest in Landscape Architecture in Mixed-use Developments/Centers in Texas?

1) What are the drivers of economic value in mixed-use development/centers in Texas?
2) What role does landscape architecture play in creating in mixed-use development/centers according to developers?
3) What aspects of landscape architecture are utilized most among developers?

The Economics of Landscapes: Why Invest in Landscape Architecture in Mixed-use Development/Centers in Texas?

Interview Questions/Methods data

INTERVIEW QUESTIONS
Part.1- Profile questions:

Background:

1. What is your education?

2. What is your personal experience level in the real estate business, in years?
    a. In what capacity (investor, developer, Investor/developer, real estate sales, etc.)?

3. How would you describe the size of your company/employer as it relates to real estate development?

4. What percent of your development experience is mixed-use?

5. How long has your company/employer been in real estate development?

6. What is your typical investment horizon for mixed-used developments? (Please elaborate short term (<10 years) vs. long term (beyond 10 years)

Part.2- In-depth Interview questions:
(Respondents will be provided with the definition of Mixed-Use Centers)

1. What is landscape architecture to you?

2. At what point of the design development process do budgets for items such as landscape architecture come into play?

    a. What percentage of overall project budget is typically allotted to elements of landscape architecture in mixed-use developments/centers?

3. How does landscape architecture impact your project feasibility assessment at various stages (pre-development, during, and post-development)?

4. From your perspective, what design elements of landscape architecture contribute to your definition of value for mixed-use developments/centers?

5. What insight can you provide on the value impact of landscape architecture elements in mixed-use development/centers?

6. What aspects of landscape architecture are utilized most among developers?

7. Do you design open space into your mixed-use?
    - Is this open space considered permanent or adjustable?
    - What are the drivers in determining whether open space is permanent or adjustable?

8. What are the risks and benefits associated with investing in landscape architecture in mixed-use developments/centers?

9. What has been your experience with opportunity costs associated with a lack of investment in landscape architecture?

10. Is there anything else you want to add?

11. Can you think of and suggest anyone else who may wish to participate in my study?

Additional topics/questions for consideration:

Supplemental Questions:

1. To what extent do you believe landscape architecture positively influences the following;
    - Visual quality
    - Place perception or as defined in The Journal of Environmental Psychology, a sense of place or how we perceive a place. The concept of sense of place includes individually determined meanings, components of attachment and place characteristics of attachment [1]

2. Do you feel your perspective is consistent in the industry?

3. Is there anything else you would like to add?

[1] Scannell, L., & Gifford, R. (2010). Defining place attachment: A tripartite organizing framework. *Journal of Environmental Psychology, 30*(1), 1-10. doi:10.1016/j.jenvp.2009.09.006

The Economics of Landscapes: Why Invest in Landscape Architecture in Mixed-use Development/Centers in Texas?

Interview Questions/Methods data

4. What is the most pressing issue related to Mixed-use develops/centers and landscape?

5. Are there any hindrances to the use of landscape architecture in mixed-use developments/centers?

6. Can you give me more examples?

7. That is interesting, how so?

Appendix C

Observation Form

OBSERVATION LOCATION:		**MIXED-USE ELEMENTS**	**# USERS**
DATE:			
OBSERVED LANDSCAPE ELEMENTS:			
GREEN SPACE			
TREES			
WALKWAYS/PATHS			
PAVEMENT			
WATER FEATURES			
SCULPTURE			
PLANTERS			
FENCING			
DRAINAGE			
FURNISHINGS			
GATHERING SPACE - CHILDREN - ALL AGES			
OTHER OBERVATIONS: (Programming, etc).	OBSERVER:		

References

Ables, M. 2014. Analyzing the Value of Mixed Use Urban Infill: An Exploratory Analysis on the Change in Property Values and Demographics in Local Initiatives in Dallas and Fort Worth Texas. Thesis

Allen, N., & Davey, M. (2018). The value of constructivist grounded theory for built environment researchers. *Journal of Planning Education and Research, 38*(2), 222-232. doi:10.1177/0739456X17695195

Anderson, J. et al. (2001). A land use and land classification system for use with remote sensor data, U.S. Geological Survey Circular 671. Us Department of Interior

Ascher, K., 2015, 2017. *The Future of America's Cities Lies in the Past,* Retrieved on November 26, 2018, https://www.huffingtonpost.com/kate-ascher/future-america-cities_b_7215710.html

Bartholomew, K., & Ewing, R. (2011). Hedonic price effects of pedestrian- and transit-oriented development. *Journal of Planning Literature, 26*(1), 18-34. doi:10.1177/0885412210386540

Bell, S., Herlin, I. S., & Stiles, R. (2012). *Exploring the boundaries of landscape architecture*. Abingdon, Oxon;New York, NY;: Routledge.

Booth, G., Clayton, M. J., & Kim, J. B. (2013). A framework for designing sustainable real estate developments using Quadruple Net Value Analysis and Building Information Modeling'. In *Proceedings of the 19th International CIB World Building Congress*.

Celia Bilbao, Luis Valdés. (2016) Evaluation of the profitability of quality labels in rural tourism accommodation: a hedonic approach using propensity score matching. *Applied Economics*48:34, pages 3253-3263.

Blackson, H., (2013). Don't Get Mixed Up on Mixed-use, Place Makers, http://www.placemakers.com/2013/04/04/mixed-up-on-mixed-use/ ; Retrieved on December 2, 2018

Bragdon, D., Dean, P., Higashide, S., Hovenkotter, K., and Tsay, S. 2014 Whose on Board, 2014 Mobility Attitudes Survey. RSG, Inc. and TransportationCenter.

Bryant, A., & Charmaz, K. (2007). *The SAGE handbook of grounded theory*. London: SAGE.

Carmona, M., Maghalhaes, C. d., Edwards, M., Awour, B., & Aminossehe, S. (2001). The Value of Urban Design. London: Commission for Architecture and the Built Environment.

Castro, E.D. & Lavine, D. (2013). How Texas Spends Its Money. How Texas Gets Its Money. Why it Doesn't Add Up., The Rivard Report. Retrieved from https://therivardreport.com/how-texas-spends-its-money-how-texas-gets-its-money-why-it-doesnt-add-up/.

Chan, K. M. A., Satterfield, T., & Goldstein, J. (2012). Rethinking ecosystem services to better address and navigate cultural values. *Ecological Economics, 74*, 8-18. doi:10.1016/j.ecolecon.2011.11.01

Charmaz, K., (2005). Grounded Theory in the 21st Century: Applications for Advancing Social Justice Studies." In the Sage Handbook of Qualitative Research, 3rd ed., edited by Norman K. Denzin and Yvonne S Lincoln, 507-35. Thousand Oaks, CA: Sage

Chou, W., Lee, C., & Chang, C. (2016). Relationships between urban open spaces and humans' health benefits from an ecological perspective: A study in an urban campus.*Landscape and Ecological Engineering, 12*(2), 255-267. doi:10.1007/s11355-016-0295-5

Clark, B. (2003). Ebenezer howard and the marriage of town and country: An introduction to howard's garden cities of to-morrow (selections). *Organization & Environment, 16*(1), 87-97. doi:10.1177/1086026602250258

Crompton, J. L. (2001). The impact of parks on property values: A review of the empirical evidence. *Journal of Leisure Research, 33*(1), 1-31. doi:10.1080/00222216.2001.1194992

D'Acci, L. (2014). Monetary, subjective and quantitative approaches to assess urban quality of life and pleasantness in cities (hedonic price, willingness-to-pay, positional value, life satisfaction, isobenefit lines). *Social Indicators Research, 115*(2), 531-559. doi:10.1007/s11205-012-0221-7

de Groot, R. S., Wilson, M. A., & Boumans, R. M. J. (2002). A typology for the classification, description and valuation of ecosystem functions, goods and

services.*Ecological Economics, 41*(3), 393-408. doi:10.1016/S0921-8009(02)00089-7

De Sousa, C. A., Wu, C., & Westphal, L. M. (2009). Assessing the effect of publicly assisted brownfield redevelopment on surrounding property values. *Economic Development Quarterly, 23*(2), 95-110. doi:10.1177/0891242408328379

Deming, M. E., & Swaffield, S. (2011). *Landscape architectural research: Inquiry, strategy, design* (1. Aufl. ed.). Chichester: John Wiley & Sons, Ltd.

Dickinson, D. C., & Hobbs, R. J. (2017). Cultural ecosystem services: Characteristics, challenges and lessons for urban green space research. *Ecosystem Services, 25*, 179-194. doi:10.1016/j.ecoser.2017.04.014

Freer, E., 2018. *Mixed Use Projects Dominate New Development in Austin*., Community Impact Newspaper. https://communityimpact.com/austin/central-austin/development-construction/2018/04/30/mixed-use-projects-dominate-new-development/

Geltner, D., Miller, N. G., Clayton, J., & Eichholtz, P. (2001). *Commercial real estate analysis and investments* (Vol. 1, p. 642). Cincinnati, OH: South-western.

Glaser, B.G. and Strauss, A, The discovery of grounded theory: strategies for qualitative research Observations, 1967, Chigago:Aldine.

Goodman, L. (1961). Snowball Sampling. *The Annals of Mathematical Statistics, 32*(1), 148-170. Retrieved from http://www.jstor.org/stable/2237615

Godschalk, D. R. (2007). The devil is in the definitions: Comment on hirt: U.S. zoning: Mixed use by design. *Journal of the American Planning Association, 73*(4), 451. doi:10.1080/01944360708978525

Hayden, D. (1995). *The power of place: Urban landscapes as public history*. Cambridge, Mass: MIT Press.

Hess M., (2004), “Spatial relationships? Towards a reconceptualization of embeddedness”, *Progress in Human Geography*, 28(2): 165-186.

Hohmann, Heidi M. and Langhorst, Joern, (2004) "An Apocalyptic Manifesto" *Landscape Architecture Publications*. 17. (page 2). https://lib.dr.iastate.edu/landscapearchitecture_pubs/17

Howard, E. (1902). Garden cities of to-morrow. London: Swann Sonnenschein & Co.

HOWARD, E. (2003). garden cities of to-morrow. *Organization & Environment, 16*(1), 98-107. doi:10.1177/1086026602250259

International Council of Shopping Centers Conference, 2018.

Ipsen, D. (2011). Space, place and perception. *Exploring the boundaries of landscape architecture*, 60.

Jacobs, J. (1992). *The death and life of great american cities* (Vintage books ed.). New York: Vintage Books

Jerke, D., Porter, D., & Lassar, T. (2008). Urban design and the bottom line: Optimizing
the return on perception. Washington D.C.: The Urban Land Institute.

Jill Grant (2002) Mixed Use in Theory and Practice: *Canadian Experience with Implementing a Planning Principle*, Journal of the American Planning Association, 68:1,71-84, DOI: 10.1080/01944360208977192

Jones, Michael, and Irit Alony. 2011. “Guiding the Use of Ground Film Industry.” International Journal of Doctoral Studies 6: pg.94–114.

Kaza, N. (2013). The changing urban landscape of the continental united states.*Landscape and Urban Planning, 110*, 74-86. doi:10.1016/j.landurbplan.2012.10.015

Kejriwal, S. & Mahanjan, S.; 2018; 2019 Commercial Real Estate Outlook; Deloitte Center for Financial Solutions, Deloitte, Touche, Tomatsu.

Kotkin, J. & Cox, W., 2016. Urbanism: texas style; Texas Rising 2016, City-Journal. 2016.

Lang, J. T. (2005). *Urban design: A typology of procedures and products*. Burlington, MA;Oxford;: Elsevier/Architectural Press.

Lang, J. T. (2007). *Urban design: A typology of procedures and products*. Burlington, MA;Oxford;: Elsevier/Architectural Press.

Laverne, R. J., & Winson-Geideman, K. (2003). The influence of trees and landscaping on rental rates at office buildings. *Journal of Arboriculture, 29*(5), 281.

Lawson, B. (2006). *How designers think: The design process demystified* (4th ed.). Burlington, MA;Oxford;: Elsevier/Architectural.

Logan, J. R., Molotch, H. L., Fainstein, S., & Campbell, S. (1987). *The city as a growth machine* (pp. pp-199).

Logan, M. F. (1995). *Fighting sprawl and city hall: Resistance to urban growth in the southwest*. Tucson: University of Arizona Press

Lynch, K., & Hack, G. (1984). *Site planning* (3rd ed.). Cambridge, Mass: MIT Press.

Marzluff, J. M. (2008). *Urban ecology: An international perspective on the interaction between humans and nature* (1. Aufl. ed.). New York: Springer. doi:10.1007/978-0-387-73412-5

Masters, J. (2012). University of Massachusetts Amherst, Environmental Design Research and the Design of Urban Open Space: A Study of Current Practice in Landscape Architecture

McHarg, I. L. (1992). *Design with nature* (25th anniversary ed.). New York: J. Wiley.

Miccoli, S., Finucci, F., & Murro, R. (2014). Social evaluation approaches in landscape projects. *Sustainability, 6*(11), 7906-7920. doi:http://dx.doi.org.ezproxy.uta.edu/10.3390/su6117906

Miller, A. (2001). Valuing Open Space: Land Economics and Neighborhood Parks.Cambridge: Massachusetts Institute of Technology.

Newton, N. T. (1971). *Design on the land: The development of landscape architecture*. Cambridge, Mass: Belknap Press of Harvard University Press

O'Reilly, K., Paper, D., & Marx, S. (2012). Demystifying grounded theory for business research. *Organizational Research Methods, 15*(2), 247-262. (255) doi:10.1177/1094428111434559

Ozdil, T. R. (2008). The Economic Value of Urban Design. Saarbrücken: VDM Publishing.

Ozdil, T. R. (2006). Assessing the Economic Revitalization Impact of Urban DesignImprovements: The Texas Main Street Program. College Station: Office of Graduate Studies Texas A&M University.

Ozdil, T. R., & Taylor, P. & , & Li, J., Mattingly, S., & Bell, B. (2008). Transit OrientedDevelopment Report. Arlington: NCTCOG.

Pradhan, R., & University of Texas at Arlington. College of Architecture, Planning and Public Affairs. (2017). *Residents' perception of environmental preformance in new urbanist landscapes in north texas: Learning from addison circle, austin ranch and hometown*. Arlington, TX: University of Texas at Arlington

Return on Investment (ROI), *Merriam-Webster* online dicitionary. Retrieved December 2, 2018. https://www.merriam-webster.com/dictionary/ROI

Roberts, C., Rowley, S., & Henneberry, J. (2012). The impact of landscape quality on property investment decisions. *Journal of Property Investment & Finance, 30*(1), 69-82. doi:10.1108/14635781211194818

Rogers, R. G., & Great Britain. Urban Task Force. (1999). *Towards an urban renaissance*. London: Spon.

Robin, E. (2018). Performing real estate value(s): Real estate developers, systems of expertise and the production of space. *Geoforum,* doi:10.1016/j.geoforum.2018.05.006

Savini, F., & Aalbers, M. B. (2016). The de-contextualisation of land use planning through financialisation: Urban redevelopment in milan. *European Urban and Regional Studies, 23*(4), 878-894. doi:10.1177/0969776415585887

Scholte, S. S. K., van Teeffelen, A. J. A., & Verburg, P. H. (2015). Integrating socio-cultural perspectives into ecosystem service valuation: A review of concepts and methods.*Ecological Economics, 114*, 67-78. doi:10.1016/j.ecolecon.2015.03.007

Schwanke, D., & Urban Land Institute. Urban Development/Mixed-Use Council.Executive Group. (2003). *Mixed-use development handbook* (2nd ed.). Washington, D.C: ULI , pg. 4

Schwanke, D., & Urban Land Institute. Urban Development/Mixed-Use Council.Executive Group. (2003). *Mixed-use development handbook* (2nd ed.). Washington, D.C: ULI.

Segal, A. (2012). Urban design and the bottom line: Optimizing the return on perception. *Urban Design International, 17*(1), 78-79. doi:http://dx.doi.org.ezproxy.uta.edu/10.1057/udi.2011.21

Slijk, C. & Saving, J. (2018). *Texas Economic Growth Continues on a Healthy Pace*. Texas Economic Update. The Federal Reserve Bank of Dallas.

Stein, Clarence (1957). Unpublished notes to urban design, University of Pennsylvania (mimeographed).

Sterner, T., Motel, P., Choumert, J., & Minea, A. (2014). Explorations in the environment-development dilemma. *Environmental and Resource Economics, 57*(4), 479.

Stewart, D. M., University of Texas at Arlington. College of Architecture, Planning and Public Affairs, & ProQuest Dissertations and Theses (Electronic resource collection). (2014). *Assessing the economic value of linear landscapes: Learning from the katy and santa fe trails in dallas, texas*. Arlington, TX: University of Texas at Arlington.

Strauss, A., & Corbin, J. M. (1998). Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory. SAGE Publications.

Surová, D., & Pinto-Correia, T. (2016). A landscape menu to please them all: Relating users' preferences to land cover classes in the mediterranean region of alentejo, southern portugal. *Land use Policy, 54*, 355-365. doi:10.1016/j.landusepol.2016.02.026

Swaffield, S. R. (2002). *Theory in landscape architecture: A reader*. Philadelphia: University of Pennsylvania Press.

Thompson, C. W. (2002). Urban open space in the 21st century. *Landscape and Urban Planning, 60*(2), 59-72. doi:10.1016/S0169-2046(02)00059-2

United Nations, 2018. United Nations Population Division. World Urbanization Prospects. https://population.un.org/wup/Publications/

University of Texas at Austin. Center for American Architecture and Design. (1997). *value*. Austin, Tex: School of Architecture, University of Texas at Austin.

Valencia, L. 2018, Demographics of Texas and the Aging Population, Retrieved on November 26, 2018, http://txsdc.utsa.edu/Resources/Presentations/OSD/2018/2018_02_22_JLLSeniorsHousingOutlook.pdf

Vision North Texas, North Texas 2050, 2009, Retrieved on November 26, 2018, https://www.huffingtonpost.com/kate-ascher/future-america-cities_b_7215710.html

Vision North Texas 2050, 2009, Implementation Mixed-use Centers, Retrieved on November 26, 2018, http://www.visionnorthtexas.org/Centers/criteria.asp#Criteria

Westin, S., Institutet för bostads- och urbanforskning (IBF), Humanistisk-samhällsvetenskapliga vetenskapsområdet, Uppsala universitet, & Samhällsvetenskapliga fakulteten. (2011). The life and form of the city: An interview with bill hillier. *Space and Culture, 14*(2), 227-237. doi:10.1177/1206331211404391

Whyte, W. H. (1980). *The social life of small urban spaces*. Washington, D.C: Conservation Foundation

Wood, S., 2004, RUS IN URBE: THE DOMUS AUREA AND NERONIAN HORTI IN THE CITY OF ROME, The school of Historical Studies Postgraduate Forum e-Journal, Edition Three, *The School of Historical Studies Postgraduate Forum e-Journal*, *Edition Three*, *2004* https://www.societies.ncl.ac.uk/pgfnewcastle/files/2015/05/Wood-Rus-in-urbe.pdf

Wu, J. (2014). Urban ecology and sustainability: The state-of-the-science and future directions. *Landscape and Urban Planning, 125*, 209-221. doi:10.1016/j.landurbplan.2014.01.018

Biographical Information

Ann Bridget Podeszwa holds a Master of Landscape Architecture degree from the University of Texas at Arlington, a Master of Business Administration from Michigan State University and a Bachelor of Science degree in Political Science from Miami University. Ann's future career goals are to obtain licensure in landscape architecture and to practice landscape architecture with an emphasis on public and public private spaces. Over the course of her studies, Ann contributed to research studies identifying landscape mitigation techniques for regional hydrarulic fracturing operations and the use of school gardens to improve academic outcomes in North Texas.

Ann's experience in international finance and global sourcing for a fortune 50 company spurs Ann's interest in understanding both the economic and social value of landscape architecture. Ann's goal is to bridge both design and business to create better partnerships in affecting sustainable growth in North Texas. It is Ann's desire that students balance both design and economics as part of their training in landscape architecture. A better understanding of client wants and needs will allow students and practitioners to anticipate client concerns and mitigate economic marginalization of design by proactively affecting creative design solutions for sustainable growth.